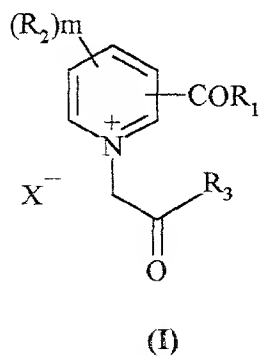


What is claimed is :

1. A cosmetic composition comprising an effective amount of a compound with free radical scavenging, AGE-breaking and AGE-inhibiting activity having the formula (I),



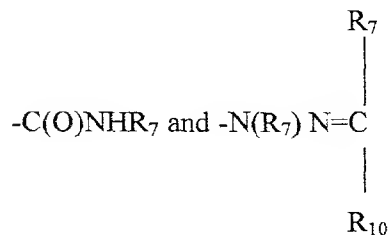
or its cosmetically acceptable salts contained in a cosmetically acceptable carrier wherein

$R_1$  is  $-R_4-R_5$  or  $-N(R_7)N(R_7)R_9$  and  $Y-R_{11}$ ,

15  $R_4$  is selected from the group consisting of  $-N(R_7)R_6O-$ ,  $-N(R_7)R_6N(R_7)$ ,  $-OR_6O$ , and  $-OR_6N(R_7)-$ ,

where  $R_6$  is alkyl,

20  $R_5$  is selected from the group consisting of alkyl, aryl including heteroaryl,  $-COR_7$ ,  $-SO_2R_7$ ,  $-C(S)NHR_7$ ,  $-C(NH)NHR_7$ ,  $-COR_{10}$ ,



where  $R_7$  is selected from the group consisting of H, alkyl and aryl including heteroaryl,

provided  $R_7$  may be the same or different for  $R_1$  and  $R_3$  in the same compound;

$R_2$  is selected from the group consisting of F, Cl, Br, I,  $OR_7$ ,  $NO_2$ , alkyl, aryl including heteroaryl, formyl, acyl,  $C(O)NR_7R_{10}$ ,  $C(O)OR_7$ ,  $NR_7R_{10}$ ,  $N=C(R_7)(R_{10})$ ,  $SR_7$ ,  $SO_2NH_2$ ,

35  $SO_2$  alkyl and  $SO_2$ aryl;

$m$  is 0, 1 or 2;

$R_3$  is selected from the group consisting of  $R_7$ ,  $OR_7$ ,  $N(R_7)(R_{10})$ ,  $N=C(R_7)(R_{10})$ ,  $N(R_7)$

40  $N(R_7)(R_{10})$ ,  $N(R_7)N=C(R_7)(R_{10})$  and  $CH(R_7)C(O)R_8$

where  $R_8$  is selected from the group consisting of  $R_7$ ,  $OR_7$  and  $NR_7R_{10}$ ;

$R_9$  is selected from the group consisting of hydrogen, alkyl, aryl including heteroaryl,  $C(O)R_{10}$ ,  $-SO_2R_{10}$ ,  $C(S)NHR_{10}$ ,  $C(NH)NH(R_{10})$  and  $C(O)NHR_{10}$ ;

45

$R_{10}$  is selected from the group consisting of H, alkyl and aryl, including heteroaryl and in each case may be the same or different from substituent  $R_7$ , provided  $R_{10}$  may be the same or different for  $R_1$  and  $R_3$  in the same compound;

$Y$  is selected from oxygen, NH,  $NR_{12}$  and null

50  $R_{11}$  and  $R_{12}$  are independently selected from hydrogen, alkyl and aryl

$X$  is selected from group consisting of a halide ion, acetate ion, perchlorate ion, sulfonate ion, oxalate ion, citrate ion, tosylate ion, maleate ion, mesylate ion, carbonate ion, sulfite ion, phosphoric hydrogen ion, phosphonate ion, phosphate ion,  $BF_4^-$  and  $PF_6^-$ ;

55 with proviso that,

(i) when two alkyl groups are present on the same carbon or nitrogen, they may be

linked together to form a cyclic structure;

60 (ii) the nitrogen of heteroaryl ring of  $R_{10}$ , when present, may be quaternized;

- (iii) when  $R_3$  is  $OR_7$  and  $R_1$  is  $-NHNH_2$  then  $R_7$  is not alkyl and
- (iv) when  $R_3$  is  $OR_7$ ,  $R_1$  is  $N(R_7)(NR_7)R_9$  and  $R_9$  is  $C(O)R_{10}$  where  $R_{10}$  is alkyl, then  $R_7$  is not hydrogen.

2. The composition as claimed in claim 1, wherein  $-C(O)R_1$  group of said compound is at position 3 or 4.

3. The composition as claimed in claim 2, wherein  $-C(O)R_1$  group of said compound is at position 3.

4. The composition as claimed in claim 1, wherein for the said compound  $m$  is 0 or 1.

5. The composition as claimed in claim 2, wherein for the said compound  $m$  is 0 or 1.

6. The composition as claimed in claim 3, wherein for the said compound  $m$  is 0 or 1.

7. The composition as claimed in claim 1, wherein for the said compound  $m$  is 0.

8. The composition as claimed in claim 2, wherein for the said compound  $m$  is 0.

9. The composition as claimed in claim 3, wherein for the said compound  $m$  is 0.

10. The composition as claimed in claim 1, wherein for the said compound  $X$  is a halide ion.

11. The composition as claimed in claim 1, wherein said compound is selected from the group consisting of:

(a)  $N,N'$ -bis[3-carbonyl-1-(2-thien-2'-yl-2-oxoethyl)-3-pyridinium] hydrazine dibromide or other cosmetically acceptable salts thereof,

5 (b) 1-(2-ethoxy-2-oxoethyl)-3-(2-(2-pyridyl)hydrazinocarbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,

(c) 1-(2-ethoxy-2-oxoethyl)-3-(2-(benzoyloxy)ethylamino carbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,

- (d) N,N'-bis[3-carbonyl-1-(2-phenyl-2-oxoethyl)pyridinium]hydrazine dibromide or other  
10 cosmetically acceptable salts thereof,  
(e) 1-(2-phenyl-2-oxoethyl)-3-(hydrazinocarbonyl)pyridinium bromide or other  
cosmetically acceptable salts thereof,  
(f) 1-(2-thien -2'-yl -2-oxoethyl) -3-(methanesulfonyl hydrazinocarbonyl) pyridinium  
bromide or other cosmetically acceptable salts thereof,  
15 (g) N,N'-bis[3-carbonyl-1-(2-(2',4'-dichlorophenyl)-2-oxoethyl) pyridinium] hydrazine  
dibromide or other cosmetically acceptable salts thereof,  
(h) 1-(2-phenyl -2-oxoethyl) -3-(methanesulfonyl hydrazinocarbonyl) pyridinium  
bromide or other cosmetically acceptable salts thereof,  
(i) 1-(2-ethoxy -2-oxoethyl) -3-(methanesulfonyl hydrazinocarbonyl) pyridinium bromide  
20 or other cosmetically acceptable salts thereof,  
(j) 1-(2-phenyl-2-oxoethyl)-3-(phenylsulfonylhydrazino carbonyl) pyridinium bromide or  
other cosmetically acceptable salts thereof,  
(k) 1-(2-phenyl-2-oxoethyl)-2-chloro-3-(phenylsulfonyl hydrazino carbonyl) pyridinium  
bromide or other cosmetically acceptable salts thereof ,  
25 (l) 1-(2-thien -2'-yl -2-oxoethyl)-4-(2-(benzoyloxy) ethyl aminocarbonyl) pyridinium  
bromide or other cosmetically acceptable salts thereof,  
(m) 1-(2-(2',4'- dichlorophenyl) -2-oxoethyl) -3-(2-(benzoyloxy) ethylaminocarbonyl)  
pyridinium bromide or other cosmetically acceptable salts thereof,  
(n) 1-(2-phenyl -2-oxoethyl) -3-(2-(acetoxo) ethyloxy) carbonyl) pyridinium  
30 bromide or other cosmetically acceptable salts thereof and  
(o) 1-(2-ethoxy -2-oxoethyl) -3-(2-(benzoyloxy) ethyloxy carbonyl) pyridinium  
bromide or other cosmetically acceptable salts thereof.

12. The composition as claimed in claim 1, wherein said compound is selected from the  
group consisting of:

- (p) 1-(2-phenylamino-2-oxoethyl)-4-(phenylsulfonyl hydrazino carbonyl)pyridinium  
chloride or other cosmetically acceptable salts thereof,  
5 (q) 1-(2-(2',4'-dichlorophenyl)-2-oxoethyl)-3-(2(methoxy) ethyloxycarbonyl)  
pyridinium bromide or other cosmetically acceptable salts thereof,

- (r) 1-(2-phenylamino-2-oxoethyl)-3-((benzoyloxy) ethylaminocarbonyl) pyridinium chloride or other cosmetically acceptable salts thereof,
- (s) 1-(2-thien-2'-yl-2-oxoethyl)-3-(phenylaminocarbonyl hydrazinocarbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,
- (t) 1-(2-phenyl-2-oxoethyl)-3-(2-(acetoxo) ethylaminocarbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,
- (u) 1-(2-phenylamino-2-oxoethyl)-3-(phenyl sulfonyl hydrazino carbonyl) pyridinium chloride or other cosmetically acceptable salts thereof,
- (v) 1-(2-phenylamino-2-oxoethyl)-3-((4-methylphenyl)sulfonyl hydrazinocarbonyl) pyridinium chloride or other cosmetically acceptable salts thereof,
- (w) 1-(2-phenyl-2-oxoethyl)-3-(2-(benzoyloxy)ethyloxy carbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,
- (x) 1-(2-thien-2'-yl-2-oxoethyl)-3-(phenylcarbonyl hydrazino carbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,
- (y) 1-(2-ethoxy-2-oxoethyl)-3-((phenylmethyl)sulfonyl hydrazino carbonyl)pyridinium bromide or other cosmetically acceptable salts thereof and
- (z) 1-(2-phenyl-2-oxoethyl)-3-((phenylmethyl)sulfonyl hydrazino carbonyl)pyridinium bromide or other cosmetically acceptable salts thereof.

13. The composition as claimed in claim 1, wherein said compound is selected from the group consisting of :

- (aa) N, N' - bis [3-carbonyl-1-(2-furan-2'-yl-2-oxoethyl) pyridinium] hydrazine dibromide or other cosmetically acceptable salts thereof,
- (ab) N,N'-bis [3-carbonyl -1- (2-thien-2'-yl-2-oxoethyl) pyridinium] hydrazine dichloride or other cosmetically acceptable salts thereof,
- (ac) N,N'-bis-[3-carbonyl-1-(2-cyclopropylamino-2-oxoethyl) pyridinium] hydrazine dichloride or other cosmetically acceptable salts thereof,
- (ad) 1-(2',4'-dichlorophenyl-2-oxoethyl)-3-(2-methoxyethyl aminocarbonyl)-pyridinium bromide or other cosmetically acceptable salts thereof,
- (ae) 1-(2-thien-2'-yl-2-oxoethyl)-3-((2-methoxy ethyl) amino carbonyl)-5-bromo pyridinium chloride or other cosmetically acceptable salts thereof,

- (af) 1-(2-thien-2'-yl-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl) pyridinium chloride or other cosmetically acceptable salts thereof,
- 15 (ag) 1-(2-thien-2'-yl-2-oxoethyl)-3-(2-(2-chloro-3-pyridoylhydrazinocarbonyl) - pyridinium chloride or other cosmetically acceptable salts thereof,
- (ah) 1-(2-cyclopropylamino-2-oxoethyl)-3-(2-methoxyethylaminocarbonyl) -pyridinium chloride or other cosmetically acceptable salts thereof,
- (ai) 1-(2-isopropylamino-2-oxoethyl)-3-(2-methylsulfonylhydrazinocarbonyl)-
- 20 pyridinium chloride or other cosmetically acceptable salts thereof,
- (aj) 1-(2-phenylamino-2-oxo ethyl)-3-({2-(1-oxo-3-cyclohexyl)-ethyl} - hydrazinocarbonyl)-pyridinium bromide or other cosmetically acceptable salts thereof,
- (ak) 1-(2-thien-2'-yl-2-oxoethyl)-3-[2-(benzoyloxy)ethylamino carbonyl]-pyridinium bromide or other cosmetically acceptable salts thereof,
- 25 (al) 1-(4-ethoxy-2, 4-dioxobutyl)-3-(2-(benzoxyl oxy)ethylamino carbonyl)-pyridinium chloride or other cosmetically acceptable salts thereof and
- (am) 1-(2-thien-2'-yl-2-oxoethyl)-3-[1-oxo-1-(2-methoxy carbonyl) pyridyl] hydrazino pyridinium chloride or other cosmetically acceptable salts thereof.

14. The composition as claimed in claim 1, wherein said compound is selected from the group consisting of:

- (an) 1-[1-(2-thien-2'-yl-2-oxoethyl)-5-aminocarbonyl-3-carbonyl pyridinium]-2-[1-(2-thien-2'-yl-2-oxoethyl)-3-carbonyl pyridinium] hydrazine dichloride or other
- 5 cosmetically acceptable salts thereof,
- (ao) 1-(2-thien-2'-yl-2-oxoethyl)-3-(trifluoromethanesulfonyl hydrazino carbonyl) - pyridinium bromide or other cosmetically acceptable salts thereof,
- (ap) 1-[1-(2-thien-2'-yl-2-oxoethyl)-6-methyl-3-carbonyl pyridinium]-2-[1-(2-thien-2'-yl-2-oxoethyl)-3-carbonyl pyridinium] hydrazine dichloride or other
- 10 cosmetically acceptable salts thereof,
- (aq) N,N'-bis[3-carbonyl-1-(2-(5-methyl-thien-2-yl)-2-oxoethyl) pyridinium] hydrazine dichloride or other cosmetically acceptable salts thereof,
- (ar) N,N'-bis[3-carbonyl-1-(2-(5-chloro-thien-2-yl)-2-oxoethyl) pyridinium] hydrazine dichloride or other cosmetically acceptable salts thereof,

- 15 (as) 1-(2-thien-2'-yl-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl)-6-methyl pyridinium bromide or other cosmetically acceptable salts thereof,  
(at) N,N'-bis[3-carbonyl-1-(2-(4-nitro-thien-2-yl)-2-oxoethyl)pyridinium] hydrazine dichloride or other cosmetically acceptable salts thereof,  
(au) 1-(2-phenylamino-2-oxoethyl)-3-(phenyl hydrazino carbonyl) pyridinium chloride or  
20 other cosmetically acceptable salts thereof,  
(av) 1-(2-(4-nitro-thien-2-yl)-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,  
(aw) 1-(2-(5-nitro-thien-2-yl)-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl) pyridinium chloride or other cosmetically acceptable salts thereof,  
25 (ax) 1-(2-(5-chloro-thien-2-yl)-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,  
(ay) 1-(2-thien-2'-yl-2-oxoethyl)-3-(ethoxycarbonyl hydrazino carbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,  
(az) 1-(2-thien-2'-yl-2-oxoethyl)-3-(isopropylsulfonyl hydrazino carbonyl) pyridinium  
30 bromide or other cosmetically acceptable salts thereof,  
(ba) 1-(2-thien-2'-yl-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl)-5-bromo pyridinium bromide or other cosmetically acceptable salts thereof,  
(bb) 1-(2-(2-ethoxy carbonyl pyrrolidin-1-yl)-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl) pyridinium chloride or other cosmetically acceptable salts thereof,  
35 (bc) 1-(2-(5-methyl-thien-2-yl)-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl) pyridinium chloride or other cosmetically acceptable salts thereof,  
(bd) 1-(2-(4-carboethoxy-thiazolidin-3-yl)-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl) pyridinium chloride or other cosmetically acceptable salts thereof,  
(be) 1-(2-(4-benzyl piperidin-1-yl)-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl)  
40 pyridinium chloride or other cosmetically acceptable salts thereof,  
(bf) N,N(-bis[3-carbonyl-1-(2-(2-ethoxycarbonyl pyrrolidin-1-yl)-2-oxoethyl) pyridinium] hydrazine dichloride or other cosmetically acceptable salts thereof,  
(bg) 1-(2-phenylamino-2-oxoethyl)-4-[2-(benzoyloxy) ethylamino carbonyl] pyridinium chloride or other cosmetically acceptable salts thereof,  
45 (bh) 1-(2-thien-2(-yl-2-oxoethyl)-3-(phenyl hydrazino carbonyl) pyridinium bromide or

other cosmetically acceptable salts thereof,

(bi) 1-(2-thien-2(-yl-2-oxoethyl)-3-(p-methoxy phenyl sulfonyl hydrazino carbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,

(bj) 1-(2-ethoxy-2-oxoethyl)-3-(phenyl aminocarbonyl hydrazino carbonyl ) pyridinium  
50 bromide or other cosmetically acceptable salts thereof,

(bk) 1-(2-ethoxy-2-oxoethyl)-3-(p-toluene sulfonyl hydrazino carbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,

(bl) 1-(2-phenyl-2-oxoethyl)-3-(phenylamino carbonyl hydrazino carbonyl ) pyridinium bromide or other cosmetically acceptable salts thereof,

(bm) 1-(2-phenylamino-2-oxoethyl)-3-(benzyl sulfonyl hydrazino carbonyl)  
55 pyridiniumchloride or other cosmetically acceptable salts thereof,

(bn) 1-(2-phenyl-2-oxoethyl)-4-(methanesulfonyl hydrazino carbonyl ) pyridinium bromide or other cosmetically acceptable salts thereof,

(bo) 1-(2-phenyl-2-oxoethyl)-3-(phenyl hydrazino carbonyl ) pyridinium bromide  
60 or other cosmetically acceptable salts thereof,

(bp) 1 -(2-ethoxy-2-oxoethyl)-4-[2-(benzoyloxy) ethyl amino carbonyl ] pyridinium bromide or other cosmetically acceptable salts thereof,

(bq) 1-(2-ethoxy-2-oxoethyl)-3-(phenyl hydrazino carbonyl ) pyridinium bromide or other cosmetically acceptable salts thereof,

(br) 1-(2-phenyl-2-oxoethyl)-3-(p-methoxyphenyl sulfonyl hydrazino carbonyl )  
65 pyridinium bromide or other cosmetically acceptable salts thereof,

(bs) 1-(2-phenyl-2-oxoethyl)- 4-[2-(benzoyloxy) ethyl amino carbonyl] pyridinium bromide or other cosmetically acceptable salts thereof and

(bt) 1-(2-ethoxy-2-oxoethyl)- 4-(p-methanesulfonyl hydrazino carbonyl ) pyridinium  
70 bromide or other cosmetically acceptable salts thereof.

15. The composition as claimed in claim 1, wherein said compound is selected from the group consisting of:

(bu) 3-carboxylamino-1- (2-(2, 4-dichlorophenyl)-2-oxoethyl)-pyridinium bromide or other cosmetically acceptable salts thereof,

5 (bv) 3-(tetrahydrobenzothiazol-2-yl) aminocarbonyl -1-(2-(2, 4-dichlorophenyl)-2-



- oxoethyl)-pyridinium bromide or other cosmetically acceptable salts thereof,
- (bw) 1-(2-phenyl-2-oxoethyl)-3-((2-hydroxyethyl) aminocarbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,
- (bx) 3-carbonylamino-1-(2-thien-2'-yl-2-oxoethyl)-pyridinium bromide or other
- 10 cosmetically acceptable salts thereof,
- (by) 1-(2-phenyl-2-oxoethyl)-3-((p-sulfonamidophenylene) aminocarbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,
- (bz) 1-(2-ethoxy-2-oxoethyl)-3-((2-hydroxyethyl) aminocarbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,
- 15 (ca) 1-(2-phenyl-2-oxoethyl)-3-(isopropylloxycarbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,
- (cb) 1-(2-oxopropyl)-3-((2-hydroxyethyl) aminocarbonyl) pyridinium chloride or other cosmetically acceptable salts thereof,
- (cc) 1-(2-thien-2'-yl-2-oxoethyl)-3-((2-hydroxyethyl) aminocarbonyl) pyridinium
- 20 bromide or other cosmetically acceptable salts thereof,
- (cd) 1-(2-(2,4 - dichlorophenyl)-2-oxoethyl) -3- (isopropylloxycarbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,
- (ce) 1-(2-phenyl - 2- oxoethyl) - 3- ((4-methylthiazol - 2 -yl) aminocarbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,
- 25 (cf) 1-(2- phenylamino -2- oxoethyl ) -3- (n-butyloxycarbonyl) pyridinium chloride or other cosmetically acceptable salts thereof,
- (cg) 1-(2- phenylamino - 2- oxoethyl)- 3- ((2-hydroxyethyl) aminocarbonyl) - pyridinium chloride or other cosmetically acceptable salts thereof,
- (ch) 1-(2- (2,4 - dichlorophenyl ) - 2-oxoethyl) - 3- (n - butoxycarbonyl) pyridinium
- 30 bromide or other cosmetically acceptable salts thereof,
- (ci) 1-(2 - (2, 4 - dichlorophenyl) - 2-oxoethyl) - 3- (n-butylamino-carbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,
- (cj) 1-(2-phenyl-2-oxoethyl)-3-(1-phenyl-1-oxomethyl) pyridinium bromide or other cosmetically acceptable salts thereof, and
- 35 (ck) 1-(2 phenyl - 2-oxoethyl) - 3- (methoxycarbonyl) pyridinium bromide or other cosmetically acceptable salts thereof.

16. The composition as claimed in claim 1, which is suitable for

- a) reversing and preventing wrinkles,
- b) reversing and preventing fine lines,
- c) promoting epidermal growth,
- 5 d) photo protection,
- e) reversing and preventing skin discoloration,
- f) reversing and preventing age spots,
- g) conditioning and preventing dryness,
- h) reversing and preventing stretch marks,
- 10 i) reversing and preventing blemishes,
- j) skin care/ skin conditioning,
- k) reversing and preventing senile xerosis,
- l) conditioning and preventing sun burns,
- m) preventing and reversing the loss of collagen,
- 15 n) improving skin texture,
- o) improving skin tone,
- p) enhancing of skin thickness,
- q) decreasing pore size,
- r) restoring skin luster,
- 20 s) minimising signs of fatigue,
- t) reducing acne,
- u) treatment of Telangiectasia or
- v) improving the aesthetic appearance of hair and nails.

17. A composition useful for the cosmetic application comprising an effective amount of a compound with free radical scavenger, AGE breaker and AGE inhibitor activity as defined in claim 1 or its cosmetically acceptable salts contained in a cosmetically acceptable carrier wherein said composition is effective for atleast one of the following

5 applications:

- a) reversal and prevention of wrinkles,

- b) reversal and prevention of fine lines,
- c) promotion of epidermal growth,
- d) photo protection of skin,
- 10 e) reversal and prevention of skin discoloration,
- f) reversal and prevention of age spots,
- g) conditioning and prevention of dry spot,
- h) reversal and prevention of stretch marks,
- i) reversal and prevention of blemishes,
- 15 j) skin care and conditioning,
- k) reversal and prevention of senile xerosis,
- l) conditioning and prevention of sun burns,
- m) preventing and reversing the loss of collagen,
- n) improving skin texture,
- 20 o) improving skin tone,
- p) enhancing of skin thickness,
- q) decreasing pore size,
- r) restoring skin luster,
- s) minimising signs of fatigue,
- 25 t) reducing acne,
- u) treatment of Telangiectasia and
- v) improving aesthetic appearance of hair and nails.

18. The composition as claimed in claim 17, in the form of a solution, gel, ointment, lotion, cream, microemulsion aerosol, dispersion or milk.

19. A method of cosmetic application with reversing and preventing effects on aging and wrinkling of the skin comprising applying an effective amount of a cosmetic composition comprising a compound with free radical scavenger, AGE-breaker and AGE-inhibitor activity having the formula (I) as defined in Claim 1 or its cosmetically acceptable salts  
5 contained in a cosmetically acceptable carrier.

20. The method as claimed in claim 19, wherein the effective amount is effective for ageing.

21. The method as claimed in claim 20, wherein aging is extrinsic aging and intrinsic aging.

22. The method as claimed in claim 20, wherein aging is extrinsic aging.

23. A method of cosmetic application with reversing and preventing effects on atleast one of the following :

- i) fine lines,
  - ii) skin discoloration
  - 5 iii) age spots
  - iv) stretch marks
  - v) blemishes and
  - vi) senile xerosis
  - vii) preventing and reversing loss of collagen
- 10 comprising applying an effective amount of a cosmetic composition comprising compound with free radical scavenger, AGE breaker and AGE inhibitor activity having the formula (I) as defined in claim 1 or its cosmetically acceptable salts contained in a cosmetically acceptable carrier.

24. A method of cosmetic application with conditioning and preventing effects in skin dryness and /or sun burns comprising applying an effective amount of a cosmetic composition comprising a compound with free radical scavenger, AGE breaker and AGE inhibitor activity having the formula (I) as defined in claim 1 or cosmetically acceptable  
5 salts thereof contained in a cosmetically acceptable carrier.

25. A method of cosmetic application with effects of promoting epidermal growth and/or photo protection, improving skin texture, improving skin tone, enhancing skin thickness, decreasing pore size, restoring skin luster, minimizing signs of fatigue, reducing tone,

treatment of telangiectasia comprising applying an effective amount of a cosmetic composition comprising a compound with free radical scavenger, AGE breaker and AGE inhibitor activity having the formula (I) as defined in claim 1 or its cosmetically acceptable salts contained in a cosmetically acceptable carrier.

26. The method as claimed in claim 19, wherein said compound is selected from the group consisting of the following compounds:

- (a) N,N'-bis[3-carbonyl-1-(2-thien-2'-yl-2-oxoethyl)-3-pyridinium] hydrazine dibromide or other cosmetically acceptable salts thereof,
- (b) 1-(2-ethoxy-2-oxoethyl)-3-(2-(2-pyridyl)hydrazinocarbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,
- (c) 1-(2-ethoxy-2-oxoethyl)-3-(2-(benzoyloxy) ethylamino carbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,
- (d) N,N'-bis[3-carbonyl-1-(2-phenyl-2-oxoethyl)pyridinium]hydrazine dibromide or other cosmetically acceptable salts thereof,
- (e) 1-(2-phenyl-2-oxoethyl)-3-(hydrazinocarbonyl)pyridinium bromide or other cosmetically acceptable salts thereof,
- (f) 1-(2-thien-2'-yl-2-oxoethyl)-3-(methanesulfonyl hydrazinocarbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,
- (g) N,N'-bis[3-carbonyl-1-(2-(2',4'-dichlorophenyl)-2-oxoethyl) pyridinium] hydrazine dibromide or other cosmetically acceptable salts thereof,
- (h) 1-(2-phenyl-2-oxoethyl)-3-(methanesulfonyl hydrazinocarbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,
- (i) 1-(2-ethoxy-2-oxoethyl)-3-(methanesulfonyl hydrazinocarbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,
- (j) 1-(2-phenyl-2-oxoethyl)-3-(phenylsulfonylhydrazino carbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,
- (k) 1-(2-phenyl-2-oxoethyl)-2-chloro-3-(phenylsulfonyl hydrazino carbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,
- (l) 1-(2-thien-2'-yl-2-oxoethyl)-4-(2-(benzoyloxy) ethyl aminocarbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,

- (m) 1-(2-(2,4'-dichlorophenyl)-2-oxoethyl)-3-(2-(benzoyloxy)ethylaminocarbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,
- (n) 1-(2-phenyl-2-oxoethyl)-3-(2-(acetoxy)ethyloxy carbonyl) pyridinium bromide or
- 30 other cosmetically acceptable salts thereof and
- (o) 1-(2-ethoxy-2-oxoethyl)-3-(2-(benzoyloxy)ethyloxy carbonyl) pyridinium bromide or other cosmetically acceptable salts thereof.
27. The method as claimed in claim 19, wherein said compound is selected from the group consisting of the following compounds:
- (p) 1-(2-phenylamino-2-oxoethyl)-4-(phenylsulfonyl hydrazino carbonyl)pyridinium chloride or other cosmetically acceptable salts thereof,
- 5 (q) 1-(2-(2,4'-dichlorophenyl)-2-oxoethyl)-3-(2(methoxy) ethyloxycarbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,
- (r) 1-(2-phenylamino-2-oxoethyl)-3-((benzoyloxy) ethylaminocarbonyl) pyridinium chloride or other cosmetically acceptable salts thereof,
- (s) 1-(2-thien-2'-yl-2-oxoethyl)-3-(phenylaminocarbonyl hydrazinocarbonyl) pyridinium
- 10 bromide or other cosmetically acceptable salts thereof,
- (t) 1-(2-phenyl-2-oxoethyl)-3-(2-(acetoxy) ethylaminocarbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,
- (u) 1-(2-phenylamino-2-oxoethyl)-3-(phenyl sulfonyl hydrazino carbonyl) pyridinium chloride or other cosmetically acceptable salts thereof,
- 15 (v) 1-(2-phenylamino-2-oxoethyl)-3-((4-methylphenyl)sulfonyl hydrazinocarbonyl) pyridinium chloride or other cosmetically acceptable salts thereof,
- (w) 1-(2-phenyl-2-oxoethyl)-3-(2-(benzoyloxy)ethyloxy carbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,
- (x) 1-(2-thien-2'-yl-2-oxoethyl)-3-(phenylcarbonyl hydrazino carbonyl)
- 20 pyridinium bromide or other cosmetically acceptable salts thereof,
- (y) 1-(2-ethoxy-2-oxoethyl)-3-((phenylmethyl)sulfonyl hydrazino carbonyl)pyridinium bromide or other cosmetically acceptable salts thereof and
- (z) 1-(2-phenyl-2-oxoethyl)-3-((phenylmethyl)sulfonyl hydrazino carbonyl)pyridinium bromide or other cosmetically acceptable salts thereof.

28. The method as claimed in claim 19, wherein said compound is selected from the group consisting of the following compounds:

- (aa) N, N' - bis [3-carbonyl-1-(2-furan-2'-yl-2-oxoethyl) pyridinium] hydrazine dibromide or other cosmetically acceptable salts thereof,
- 5 (ab) N,N'-bis [3-carbonyl -1- (2-thien-2'-yl-2-oxoethyl) pyridinium] hydrazine dichloride or other cosmetically acceptable salts thereof,
- (ac) N,N'-bis-[3-carbonyl-1-(2-cyclopropylamino-2-oxoethyl) pyridinium] hydrazine dichloride or other cosmetically acceptable salts thereof,
- (ad) 1-(2',4'-dichlorophenyl-2-oxoethyl)-3-(2-methoxyethyl aminocarbonyl)-pyridinium  
10 bromide or other cosmetically acceptable salts thereof,
- (ae) 1-(2-thien-2'-yl-2-oxoethyl)-3-((2-methoxy ethyl) amino carbonyl)-5-bromo pyridinium chloride or other cosmetically acceptable salts thereof,
- (af) 1-(2-thien-2'-yl-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl) pyridinium chloride or other cosmetically acceptable salts thereof,
- 15 (ag) 1-(2-thien-2'yl-2-oxoethyl)-3-(2-(2-chloro-3-pyridoylhydrazinocarbonyl) - pyridinium chloride or other cosmetically acceptable salts thereof,
- (ah) 1-(2-cyclopropylamino-2-oxoethyl)-3-(2-methoxyethylaminocarbonyl) -pyridinium chloride or other cosmetically acceptable salts thereof,
- (ai) 1-(2-isopropylamino-2-oxoethyl)-3-(2-methylsulfonylhydrazinocarbonyl)-  
20 pyridinium chloride or other cosmetically acceptable salts thereof,
- (aj) 1-(2-phenylamino-2-oxo ethyl)-3-({2-(1-oxo-3-cyclohexyl)-ethyl} - hydrazinocarbonyl)-pyridinium bromide or other cosmetically acceptable salts thereof,
- (ak) 1-(2-thien-2'-yl-2-oxoethyl)-3-[2-(benzoyloxy)ethylamino carbonyl]-pyridinium bromide or other cosmetically acceptable salts thereof,
- 25 (al) 1-(4-ethoxy-2, 4-dioxobutyl)-3-(2-(benzoxyl oxy)ethylamino carbonyl)-pyridinium chloride or other cosmetically acceptable salts thereof and
- (am) 1-(2-thien-2'-yl-2-oxoethyl)-3-[1-oxo-1-(2-methoxy carbonyl) pyridyl] hydrazino pyridinium chloride or other cosmetically acceptable salts thereof.

29. The method as claimed in claim 19, wherein said compound is selected from the group consisting of the following compounds:

(an) 1-[1-(2-thien-2'-yl-2-oxoethyl)-5-aminocarbonyl-3-carbonyl pyridinium]-2-[1-(2-thien-2'-yl-2-oxoethyl)-3-carbonyl pyridinium] hydrazine dichloride or other

5 cosmetically acceptable salts thereof,

(ao) 1-(2-thien-2'-yl-2-oxoethyl)-3-(trifluoromethanesulfonyl hydrazino carbonyl) - pyridinium bromide or other cosmetically acceptable salts thereof,

(ap) 1-[1-(2-thien-2'-yl-2-oxoethyl)-6-methyl-3-carbonyl pyridinium]-2-

10 [1-(2-thien-2'-yl-2-oxoethyl)-3-carbonyl pyridinium] hydrazine dichloride or other cosmetically acceptable salts thereof,

(aq) N,N'-bis[3-carbonyl-1-(2-(5-methyl-thien-2-yl)-2-oxoethyl) pyridinium] hydrazine dichloride or other cosmetically acceptable salts thereof,

(ar) N,N'-bis[3-carbonyl-1-(2-(5-chloro-thien-2-yl)-2-oxoethyl) pyridinium] hydrazine dichloride or other cosmetically acceptable salts thereof,

15 (as) 1-(2-thien-2'-yl-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl)-6-methyl pyridinium bromide or other cosmetically acceptable salts thereof,

(at) N,N'-bis[3-carbonyl-1-(2-(4-nitro-thien-2-yl)-2-oxoethyl)pyridinium] hydrazine dichloride or other cosmetically acceptable salts thereof,

20 (au) 1-(2-phenylamino-2-oxoethyl)-3-(phenyl hydrazino carbonyl) pyridinium chloride or other cosmetically acceptable salts thereof,

(av) 1-(2-(4-nitro-thien-2-yl)-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,

(aw) 1-(2-(5-nitro-thien-2-yl)-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl) pyridinium chloride or other cosmetically acceptable salts thereof,

25 (ax) 1-(2-(5-chloro-thien-2-yl)-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,

(ay) 1-(2-thien-2'-yl-2-oxoethyl)-3-(ethoxycarbonyl hydrazino carbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,

30 (az) 1-(2-thien-2'-yl-2-oxoethyl)-3-(isopropylsulfonyl hydrazino carbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,

(ba) 1-(2-thien-2'-yl-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl)



- 5-bromo pyridinium bromide or other cosmetically acceptable salts thereof,
- (bb) 1-(2-(2-ethoxy carbonyl pyrrolidin-1-yl)-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl) pyridinium chloride or other cosmetically acceptable salts thereof,
- 35 (bc) 1-(2-(5-methyl-thien-2-yl)-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl) pyridinium chloride or other cosmetically acceptable salts thereof,
- (bd) 1-(2-(4- carboethoxy -thiazolidin-3-yl)-2-oxoethyl) -3-(methanesulfonyl hydrazino carbonyl ) pyridinium chloride or other cosmetically acceptable salts thereof,
- (be) 1-(2-(4-benzyl piperidin-1-yl)-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl) pyridinium chloride or other cosmetically acceptable salts thereof,
- 40 (bf) N,N(bis[3-carbonyl-1-(2-(2-ethoxycarbonyl pyrrolidin-1-yl)-2-oxoethyl) pyridinium] hydrazine dichloride or other cosmetically acceptable salts thereof,
- (bg) 1-(2-phenylamino-2-oxoethyl)-4 -[ 2-(benzoyloxy) ethylamino carbonyl ] pyridinium chloride or other cosmetically acceptable salts thereof,
- 45 (bh) 1-(2-thien-2(-yl-2-oxoethyl)-3-(phenyl hydrazino carbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,
- (bi) 1-(2-thien-2(-yl-2-oxoethyl)-3-(p-methoxy phenyl sulfonyl hydrazino carbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,
- (bj) 1-(2-ethoxy-2-oxoethyl)-3-(phenyl aminocarbonyl hydrazino carbonyl ) pyridinium bromide or other cosmetically acceptable salts thereof,
- 50 (bk) 1-(2-ethoxy-2-oxoethyl)-3-(p-toluene sulfonyl hydrazino carbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,
- (bl) 1-(2-phenyl-2-oxoethyl)-3-(phenylamino carbonyl hydrazino carbonyl ) pyridinium bromide or other cosmetically acceptable salts thereof,
- 55 (bm) 1-(2-phenylamino-2-oxoethyl)-3-(benzyl sulfonyl hydrazino carbonyl) pyridiniumchloride or other cosmetically acceptable salts thereof,
- (bn) 1-(2-phenyl-2-oxoethyl)-4-(methanesulfonyl hydrazino carbonyl ) pyridinium bromide or other cosmetically acceptable salts thereof,
- (bo) 1-(2-phenyl-2-oxoethyl)-3-(phenyl hydrazino carbonyl ) pyridinium bromide or other cosmetically acceptable salts thereof,
- 60 (bp) 1 -(2-ethoxy-2-oxoethyl)-4-[2-(benzoyloxy) ethyl amino carbonyl ] pyridinium bromide or other cosmetically acceptable salts thereof,

- (bq) 1-(2-ethoxy-2-oxoethyl)-3-(phenyl hydrazino carbonyl ) pyridinium bromide or other cosmetically acceptable salts thereof,
- 65 (br) 1-(2-phenyl-2-oxoethyl)-3-(p-methoxyphenyl sulfonyl hydrazino carbonyl ) pyridinium bromide or other cosmetically acceptable salts thereof,
- (bs) 1-(2-phenyl-2-oxoethyl)- 4-[2-(benzoyloxy) ethyl amino carbonyl] pyridinium bromide or other cosmetically acceptable salts thereof and
- (bt) 1-(2-ethoxy-2-oxoethyl)- 4-(p-methanesulfonyl hydrazino carbonyl ) pyridinium
- 70 bromide or other cosmetically acceptable salts thereof.

30. The method as claimed in claim 19, wherein said compound is selected from the group consisting of the following compounds:

- (bu) 3-carbonylamino-1- (2-(2, 4-dichlorophenyl)-2-oxoethyl)-pyridinium bromide or other cosmetically acceptable salts thereof,
- 5 (bv) 3-(tetrahydrobenzothiazol-2-yl) aminocarbonyl -1-(2-(2, 4-dichlorophenyl)-2-oxoethyl)-pyridinium bromide or other cosmetically acceptable salts thereof,
- (bw) 1-(2-phenyl-2-oxoethyl)-3-((2-hydroxyethyl) aminocarbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,
- (bx) 3-carbonylamino-1- (2-thien-2'-yl-2-oxoethyl)-pyridinium bromide or other
- 10 cosmetically acceptable salts thereof,
- (by) 1-(2-phenyl -2-oxoethyl)-3-((p-sulfonamidophenylene) aminocarbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,
- (bz) 1-(2-ethoxy-2-oxoethyl)-3-((2-hydroxyethyl) aminocarbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,
- 15 (ca) 1-(2-phenyl-2-oxoethyl)-3-(isopropylloxycarbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,
- (cb) 1-(2-oxopropyl)-3-((2-hydroxyethyl) aminocarbonyl) pyridinium chloride or other cosmetically acceptable salts thereof,
- (cc) 1-(2-thien-2'-yl-2-oxoethyl)-3-((2-hydroxyethyl) aminocarbonyl) pyridinium
- 20 bromide or other cosmetically acceptable salts thereof,
- (cd) 1-(2-(2,4 - dichlorophenyl-2-oxoethyl) -3- (isopropylloxycarbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,

(ce) 1-(2-phenyl - 2- oxoethyl) - 3- ((4-methylthiazol - 2 -yl) aminocarbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,

25 (cf) 1-(2- phenylamino -2- oxoethyl ) -3- (n-butyloxycarbonyl) pyridinium chloride or other cosmetically acceptable salts thereof,

(cg) 1-(2- phenylamino - 2- oxoethyl)- 3- ((2-hydroxyethyl) aminocarbonyl) - pyridinium chloride or other cosmetically acceptable salts thereof,

(ch) 1-(2- (2,4 - dichlorophenyl ) - 2-oxoethyl) - 3- (n - butoxycarbonyl) pyridinium  
30 bromide or other cosmetically acceptable salts thereof,

(ci) 1-(2 - (2, 4 - dichlorophenyl) - 2-oxoethyl) - 3- (n-butylamino-carbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,

(cj) 1-(2-phenyl-2-oxoethyl)-3-(1-phenyl-1-oxomethyl) pyridinium bromide or other cosmetically acceptable salts thereof, and

35 (ck) 1-(2 phenyl - 2-oxoethyl) - 3- (methoxycarbonyl) pyridinium bromide or other cosmetically acceptable salts thereof.

31. The method as claimed in claim 23, wherein said compound is selected from the group consisting of the following compounds:

(a) N,N'-bis[3-carbonyl-1-(2-thien -2'- yl -2-oxoethyl) -3-pyridinium] hydrazine dibromide or other cosmetically acceptable salts thereof,

5 (b) 1-(2-ethoxy -2-oxoethyl) -3-(2-(2-pyridyl)hydrazinocarbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,

(c) 1-(2-ethoxy -2-oxoethyl) -3-(2-(benzoyloxy) ethylamino carbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,

(d) N,N'-bis[3-carbonyl-1-(2-phenyl-2-oxoethyl)pyridinium]hydrazine dibromide or other  
10 cosmetically acceptable salts thereof,

(e) 1-(2-phenyl-2-oxoethyl)-3-(hydrazinocarbonyl)pyridinium bromide or other cosmetically acceptable salts thereof,

(f) 1-(2-thien -2'-yl -2-oxoethyl) -3-(methanesulfonyl hydrazinocarbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,

15 (g) N,N'-bis[3-carbonyl-1-(2-(2',4'-dichlorophenyl)-2-oxoethyl) pyridinium] hydrazine dibromide or other cosmetically acceptable salts thereof,

(h) 1-(2-phenyl-2-oxoethyl)-3-(methanesulfonyl hydrazinocarbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,

20 (i) 1-(2-ethoxy-2-oxoethyl)-3-(methanesulfonyl hydrazinocarbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,

(j) 1-(2-phenyl-2-oxoethyl)-3-(phenylsulfonylhydrazino carbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,

(k) 1-(2-phenyl-2-oxoethyl)-2-chloro-3-(phenylsulfonyl hydrazino carbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,

25 (l) 1-(2-thien-2'-yl-2-oxoethyl)-4-(2-(benzoyloxy) ethyl aminocarbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,

(m) 1-(2-(2,4'-dichlorophenyl)-2-oxoethyl)-3-(2-(benzoyloxy) ethylaminocarbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,

30 (n) 1-(2-phenyl-2-oxoethyl)-3-(2-(acetoxy) ethyloxy) carbonyl) pyridinium bromide or other cosmetically acceptable salts thereof and

(o) 1-(2-ethoxy-2-oxoethyl)-3-(2-(benzoyloxy) ethyloxy carbonyl) pyridinium bromide or other cosmetically acceptable salts thereof

32. The method as claimed in claim 23, wherein said compound is selected from the group consisting of the following compounds:

(p) 1-(2-phenylamino-2-oxoethyl)-4-(phenylsulfonyl hydrazino carbonyl)pyridinium chloride or other cosmetically acceptable salts thereof,

5 (q) 1-(2-(2,4'-dichlorophenyl)-2-oxoethyl)-3-(2(methoxy) ethyloxycarbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,

(r) 1-(2-phenylamino-2-oxoethyl)-3-((benzoyloxy) ethylaminocarbonyl) pyridinium chloride or other cosmetically acceptable salts thereof,

10 (s) 1-(2-thien-2'-yl-2-oxoethyl)-3-(phenylaminocarbonyl hydrazinocarbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,

(t) 1-(2-phenyl-2-oxoethyl)-3-(2-(acetoxy) ethylaminocarbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,

(u) 1-(2-phenylamino-2-oxoethyl)-3-(phenyl sulfonyl hydrazino carbonyl) pyridinium chloride or other cosmetically acceptable salts thereof,

- 15 (v) 1-(2-phenylamino-2-oxoethyl)-3-((4-methylphenyl)sulfonyl hydrazinocarbonyl) pyridinium chloride or other cosmetically acceptable salts thereof,  
 (w) 1-(2-phenyl-2-oxoethyl)-3-(2-(benzoyloxy)ethoxy carbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,  
 (x) 1-(2-thien-2'-yl-2-oxoethyl)-3-(phenylcarbonyl hydrazino carbonyl)  
 20 pyridinium bromide or other cosmetically acceptable salts thereof,  
 (y) 1-(2-ethoxy-2-oxoethyl)-3-((phenylmethyl)sulfonyl hydrazino carbonyl)pyridinium bromide or other cosmetically acceptable salts thereof and  
 (z) 1-(2-phenyl-2-oxoethyl)-3-((phenylmethyl)sulfonyl hydrazino carbonyl)pyridinium bromide or other cosmetically acceptable salts thereof.

33. The method as claimed in claim 23, wherein said compound is selected from the group consisting of the following compounds:

- (aa) N, N' - bis [3-carbonyl-1-(2-furan-2'-yl-2-oxoethyl) pyridinium] hydrazine dibromide or other cosmetically acceptable salts thereof,  
 5 (ab) N,N'-bis [3-carbonyl -1- (2-thien-2'-yl-2-oxoethyl) pyridinium] hydrazine dichloride or other cosmetically acceptable salts thereof,  
 (ac) N,N'-bis-[3-carbonyl-1-(2-cyclopropylamino-2-oxoethyl) pyridinium] hydrazine dichloride or other cosmetically acceptable salts thereof,  
 (ad) 1-(2',4'-dichlorophenyl-2-oxoethyl)-3-(2-methoxyethyl aminocarbonyl)-pyridinium  
 10 bromide or other cosmetically acceptable salts thereof,  
 (ae) 1-(2-thien-2'-yl-2-oxoethyl)-3-((2-methoxy ethyl) amino carbonyl)-5-bromo pyridinium chloride or other cosmetically acceptable salts thereof,  
 (af) 1-(2-thien-2'-yl-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl) pyridinium chloride or other cosmetically acceptable salts thereof,  
 15 (ag) 1-(2-thien-2'yl-2-oxoethyl)-3-(2-(2-chloro-3-pyridoylhydrazinocarbonyl) - pyridinium chloride or other cosmetically acceptable salts thereof,  
 (ah) 1-(2-cyclopropylamino-2-oxoethyl)-3-(2-methoxyethylaminocarbonyl) -pyridinium chloride or other cosmetically acceptable salts thereof,  
 (ai) 1-(2-isopropylamino-2-oxoethyl)-3-(2-methylsulfonylhydrazinocarbonyl)-  
 20 pyridinium chloride or other cosmetically acceptable salts thereof,

(aj) 1-(2-phenylamino-2-oxo ethyl)-3-({2-(1-oxo-3-cyclohexyl)-ethyl} - hydrazinocarbonyl)-pyridinium bromide or other cosmetically acceptable salts thereof,

(ak) 1-(2-thien-2'-yl-2-oxoethyl)-3-[2-(benzoyloxy)ethylamino carbonyl]-pyridinium bromide or other cosmetically acceptable salts thereof,

25 (al) 1-(4-ethoxy-2, 4-dioxobutyl)-3-(2-(benzoyloxy)ethylamino carbonyl)-pyridinium chloride or other cosmetically acceptable salts thereof and

(am) 1-(2-thien-2'-yl-2-oxoethyl)-3-[1-oxo-1-(2-methoxy carbonyl) pyridyl] hydrazino pyridinium chloride or other cosmetically acceptable salts thereof.

34. The method as claimed in claim 23, wherein said compound is selected from the group consisting of the following compounds:

(an) 1-[1-(2-thien-2'-yl-2-oxoethyl)-5-aminocarbonyl-3-carbonyl pyridinium]-2-[1-(2-thien-2'-yl-2-oxoethyl)-3-carbonyl pyridinium] hydrazine dichloride or other

5 cosmetically acceptable salts thereof,

(ao) 1-(2-thien-2'-yl-2-oxoethyl)-3-(trifluoromethanesulfonyl hydrazino carbonyl) - pyridinium bromide or other cosmetically acceptable salts thereof,

(ap) 1-[1-(2-thien-2'-yl-2-oxoethyl)-6-methyl-3-carbonyl pyridinium]-2-[1-(2-thien-2'-yl-2-oxoethyl)-3-carbonyl pyridinium] hydrazine dichloride or

10 other cosmetically acceptable salts thereof,

(aq) N,N'-bis[3-carbonyl-1-(2-(5-methyl-thien-2-yl)-2-oxoethyl) pyridinium] hydrazine dichloride or other cosmetically acceptable salts thereof,

(ar) N,N'-bis[3-carbonyl-1-(2-(5-chloro-thien-2-yl)-2-oxoethyl) pyridinium] hydrazine dichloride or other cosmetically acceptable salts thereof,

15 (as) 1-(2-thien-2'-yl-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl)-6-methyl pyridinium bromide or other cosmetically acceptable salts thereof,

(at) N,N'-bis[3-carbonyl-1-(2-(4-nitro-thien-2-yl)-2-oxoethyl)pyridinium] hydrazine dichloride or other cosmetically acceptable salts thereof,

20 (au) 1-(2-phenylamino-2-oxoethyl)-3-(phenyl hydrazino carbonyl) pyridinium chloride or other cosmetically acceptable salts thereof,

(av) 1-(2-(4-nitro-thien-2-yl)-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,

- (aw) 1-(2-(5-nitro-thien-2-yl)-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl) pyridinium chloride or other cosmetically acceptable salts thereof,
- 25 (ax) 1-(2-(5-chloro-thien-2-yl)-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,
- (ay) 1-(2-thien-2'-yl-2-oxoethyl)-3-(ethoxycarbonyl hydrazino carbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,
- (az) 1-(2-thien-2'-yl-2-oxoethyl)-3-(isopropylsulfonyl hydrazino carbonyl) pyridinium
- 30 bromide or other cosmetically acceptable salts thereof,
- (ba) 1-(2-thien-2'-yl-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl) -5-bromo pyridinium bromide or other cosmetically acceptable salts thereof,
- (bb) 1-(2-(2-ethoxy carbonyl pyrrolidin-1-yl)-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl) pyridinium chloride or other cosmetically acceptable salts thereof,
- 35 (bc) 1-(2-(5-methyl-thien-2-yl)-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl) pyridinium chloride or other cosmetically acceptable salts thereof,
- (bd) 1-(2-(4- carboethoxy -thiazolidin-3-yl)-2-oxoethyl) -3-(methanesulfonyl hydrazino carbonyl ) pyridinium chloride or other cosmetically acceptable salts thereof,
- 40 (be) 1-(2-(4-benzyl piperidin-1-yl)-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl) pyridinium chloride or other cosmetically acceptable salts thereof,
- (bf) N,N(bis[3-carbonyl-1-(2-(2-ethoxycarbonyl pyrrolidin-1-yl)-2-oxoethyl) pyridinium] hydrazine dichloride or other cosmetically acceptable salts thereof,
- (bg) 1-(2-phenylamino-2-oxoethyl)-4-[ 2-(benzoyloxy) ethylamino carbonyl ]
- 45 pyridinium chloride or other cosmetically acceptable salts thereof,
- (bh) 1-(2-thien-2(-yl-2-oxoethyl)-3-(phenyl hydrazino carbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,
- (bi) 1-(2-thien-2(-yl-2-oxoethyl)-3-(p-methoxy phenyl sulfonyl hydrazino carbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,
- 50 (bj) 1-(2-ethoxy-2-oxoethyl)-3-(phenyl aminocarbonyl hydrazino carbonyl ) pyridinium bromide or other cosmetically acceptable salts thereof,
- (bk) 1-(2-ethoxy-2-oxoethyl)-3-(p-toluene sulfonyl hydrazino carbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,

- (bl) 1-(2-phenyl-2-oxoethyl)-3-(phenylamino carbonyl hydrazino carbonyl ) pyridinium  
55 bromide or other cosmetically acceptable salts thereof,
- (bm) 1-(2-phenylamino-2-oxoethyl)-3-(benzyl sulfonyl hydrazino carbonyl)  
pyridiniumchloride or other cosmetically acceptable salts thereof,
- (bn) 1-(2-phenyl-2-oxoethyl)-4-(methanesulfonyl hydrazino carbonyl ) pyridinium  
bromide or other cosmetically acceptable salts thereof,
- 60 (bo) 1-(2-phenyl-2-oxoethyl)-3-(phenyl hydrazino carbonyl ) pyridinium bromide or  
other cosmetically acceptable salts thereof,
- (bp) 1 -(2-ethoxy-2-oxoethyl)-4-[2-(benzoyloxy) ethyl amino carbonyl ] pyridinium  
bromide or other cosmetically acceptable salts thereof,
- (bq) 1-(2-ethoxy-2-oxoethyl)-3-(phenyl hydrazino carbonyl ) pyridinium bromide or  
65 other cosmetically acceptable salts thereof,
- (br) 1-(2-phenyl-2-oxoethyl)-3-(p-methoxyphenyl sulfonyl hydrazino carbonyl )  
pyridinium bromide or other cosmetically acceptable salts thereof,
- (bs) 1-(2-phenyl-2-oxoethyl)- 4-[2-(benzoyloxy) ethyl amino carbonyl] pyridinium  
bromide or other cosmetically acceptable salts thereof and
- 70 (bt) 1-(2-ethoxy-2-oxoethyl)- 4-(p-methanesulfonyl hydrazino carbonyl ) pyridinium  
bromide or other cosmetically acceptable salts thereof

35. The method as claimed in claim 23, wherein said compound is selected from the group consisting of the following compounds:

- (bu) 3-carboxylamino-1- (2-(2, 4-dichlorophenyl)-2-oxoethyl)-pyridinium bromide or  
other cosmetically acceptable salts thereof,
- 5 (bv) 3-(tetrahydrobenzothiazol-2-yl) aminocarbonyl -1-(2-(2, 4-dichlorophenyl)-2-  
oxoethyl)-pyridinium bromide or other cosmetically acceptable salts thereof,
- (bw) 1-(2-phenyl-2-oxoethyl)-3-((2-hydroxyethyl) aminocarbonyl) pyridinium bromide  
or other cosmetically acceptable salts thereof,
- (bx) 3-carboxylamino-1- (2-thien-2'-yl-2-oxoethyl)-pyridinium bromide or other  
10 cosmetically acceptable salts thereof,
- (by) 1-(2-phenyl -2-oxoethyl)-3-((p-sulfonamidophenylene) aminocarbonyl) pyridinium  
bromide or other cosmetically acceptable salts thereof,



(bz) 1-(2-ethoxy-2-oxoethyl)-3-((2-hydroxyethyl) aminocarbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,

15 (ca) 1-(2-phenyl-2-oxoethyl)-3-(isopropylloxycarbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,

(cb) 1-(2-oxopropyl)-3-((2-hydroxyethyl) aminocarbonyl) pyridinium chloride or other cosmetically acceptable salts thereof,

20 (cc) 1-(2-thien-2'-yl-2-oxoethyl)-3-((2-hydroxyethyl) aminocarbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,

(cd) 1-(2-(2,4 - dichlorophenyl)-2-oxoethyl) -3- (isopropylloxycarbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,

(ce) 1-(2-phenyl - 2- oxoethyl) - 3- ((4-methylthiazol - 2 -yl) aminocarbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,

25 (cf) 1-(2- phenylamino -2- oxoethyl ) -3- (n-butyloxycarbonyl) pyridinium chloride or other cosmetically acceptable salts thereof,

(cg) 1-(2- phenylamino - 2- oxoethyl)- 3- ((2-hydroxyethyl) aminocarbonyl) - pyridinium chloride or other cosmetically acceptable salts thereof,

30 (ch) 1-(2- (2,4 - dichlorophenyl ) - 2-oxoethyl) - 3- (n - butoxycarbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,

(ci) 1-(2 - (2, 4 - dichlorophenyl) - 2-oxoethyl) - 3- (n-butylamino-carbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,

(cj) 1-(2-phenyl-2-oxoethyl)-3-(1-phenyl-1-oxomethyl) pyridinium bromide or other cosmetically acceptable salts thereof, and

35 (ck) 1-(2 phenyl - 2-oxoethyl) - 3- (methoxycarbonyl) pyridinium bromide or other cosmetically acceptable salts thereof

36. The method as claimed in claim 24, wherein said compound is selected from the group consisting of the following compounds:

(a) N,N'-bis[3-carbonyl-1-(2-thien -2'- yl -2-oxoethyl) -3-pyridinium] hydrazine dibromide or other cosmetically acceptable salts thereof,

5 (b) 1-(2-ethoxy -2-oxoethyl) -3-(2-(2-pyridyl)hydrazinocarbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,

- (c) 1-(2-ethoxy -2-oxoethyl) -3-(2-(benzoyloxy) ethylamino carbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,
- (d) N,N'-bis[3-carbonyl-1-(2-phenyl-2-oxoethyl)pyridinium]hydrazine dibromide or other  
10 cosmetically acceptable salts thereof,
- (e) 1-(2-phenyl-2-oxoethyl)-3-(hydrazinocarbonyl)pyridinium bromide or other cosmetically acceptable salts thereof,
- (f) 1-(2-thien -2'-yl -2-oxoethyl) -3-(methanesulfonyl hydrazinocarbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,
- (g) N,N'-bis[3-carbonyl-1-(2-(2',4'-dichlorophenyl)-2-oxoethyl) pyridinium] hydrazine  
15 dibromide or other cosmetically acceptable salts thereof,
- (h) 1-(2-phenyl -2-oxoethyl) -3-(methanesulfonyl hydrazinocarbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,
- (i) 1-(2-ethoxy -2-oxoethyl) -3-(methanesulfonyl hydrazinocarbonyl) pyridinium  
20 bromide or other cosmetically acceptable salts thereof,
- (j) 1-(2-phenyl-2-oxoethyl)-3-(phenylsulfonylhydrazino carbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,
- (k) 1-(2-phenyl-2-oxoethyl)-2-chloro-3-(phenylsulfonyl hydrazino carbonyl) pyridinium bromide or other cosmetically acceptable salts thereof ,
- (l) 1-(2-thien -2'-yl -2-oxoethyl)-4-(2-(benzoyloxy) ethyl aminocarbonyl) pyridinium  
25 bromide or other cosmetically acceptable salts thereof,
- (m) 1-(2- (2',4'- dichlorophenyl) -2-oxoethyl) -3-(2- (benzoyloxy) ethylaminocarbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,
- (n) 1-(2-phenyl -2-oxoethyl) -3-(2-(acetoxo) ethyloxy) carbonyl) pyridinium bromide or  
30 other cosmetically acceptable salts thereof and
- (o) 1-(2-ethoxy -2-oxoethyl) -3-(2-(benzoyloxy) ethyloxy carbonyl) pyridinium bromide or other cosmetically acceptable salts thereof

37. The method as claimed in claim 24, wherein said compound is selected from the group consisting of the following compounds:

- (p) 1-(2-phenylamino-2-oxoethyl)-4-(phenylsulfonyl hydrazino carbonyl)pyridinium chloride or other cosmetically acceptable salts thereof,

- 5 (q) 1-(2-(2,4'-dichlorophenyl)-2-oxoethyl)-3-(2(methoxy) ethyloxycarbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,
- (r) 1-(2-phenylamino-2-oxoethyl)-3-((benzoyloxy) ethylaminocarbonyl) pyridinium chloride or other cosmetically acceptable salts thereof,
- (s) 1-(2-thien-2'-yl-2-oxoethyl)-3-(phenylaminocarbonyl hydrazinocarbonyl) pyridinium
- 10 bromide or other cosmetically acceptable salts thereof,
- (t) 1-(2-phenyl-2-oxoethyl)-3-(2-(acetoxy) ethylaminocarbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,
- (u) 1-(2-phenylamino-2-oxoethyl)-3-(phenyl sulfonyl hydrazino carbonyl) pyridinium chloride or other cosmetically acceptable salts thereof,
- 15 (v) 1-(2-phenylamino-2-oxoethyl)-3-((4-methylphenyl)sulfonyl hydrazinocarbonyl) pyridinium chloride or other cosmetically acceptable salts thereof,
- (w) 1-(2-phenyl-2-oxoethyl)-3-(2-(benzoyloxy)ethyloxy carbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,
- (x) 1-(2-thien-2'-yl-2-oxoethyl)-3-(phenylcarbonyl hydrazino carbonyl)
- 20 pyridinium bromide or other cosmetically acceptable salts thereof,
- (y) 1-(2-ethoxy-2-oxoethyl)-3-((phenylmethyl)sulfonyl hydrazino carbonyl)pyridinium bromide or other cosmetically acceptable salts thereof and
- (z) 1-(2-phenyl-2-oxoethyl)-3-((phenylmethyl)sulfonyl hydrazino carbonyl)pyridinium bromide or other cosmetically acceptable salts thereof.

38. The method as claimed in claim 24, wherein said compound is selected from the group consisting of the following compounds:

- (aa) N, N' - bis [3-carbonyl-1-(2-furan-2'-yl-2-oxoethyl) pyridinium] hydrazine dibromide or other cosmetically acceptable salts thereof,
- 5 (ab) N,N'-bis [3-carbonyl -1- (2-thien-2'-yl-2-oxoethyl) pyridinium] hydrazine dichloride or other cosmetically acceptable salts thereof,
- (ac) N,N'-bis-[3-carbonyl-1-(2-cyclopropylamino-2-oxoethyl) pyridinium] hydrazine dichloride or other cosmetically acceptable salts thereof,
- (ad) 1-(2',4'-dichlorophenyl-2-oxoethyl)-3-(2-methoxyethyl aminocarbonyl)-pyridinium
- 10 bromide or other cosmetically acceptable salts thereof,

- (ae) 1-(2-thien-2'-yl-2-oxoethyl)-3-((2-methoxy ethyl) amino carbonyl)-5-bromo pyridinium chloride or other cosmetically acceptable salts thereof,
- (af) 1-(2-thien-2'-yl-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl) pyridinium chloride or other cosmetically acceptable salts thereof,
- 15 (ag) 1-(2-thien-2'-yl-2-oxoethyl)-3-(2-(2-chloro-3-pyridoylhydrazinocarbonyl) - pyridinium chloride or other cosmetically acceptable salts thereof,
- (ah) 1-(2-cyclopropylamino-2-oxoethyl)-3-(2-methoxyethylaminocarbonyl)-pyridinium chloride or other cosmetically acceptable salts thereof,
- (ai) 1-(2-isopropylamino-2-oxoethyl)-3-(2-methylsulfonylhydrazinocarbonyl)-
- 20 pyridinium chloride or other cosmetically acceptable salts thereof,
- (aj) 1-(2-phenylamino-2-oxo ethyl)-3-({2-(1-oxo-3-cyclohexyl)-ethyl} - hydrazinocarbonyl)-pyridinium bromide or other cosmetically acceptable salts thereof,
- (ak) 1-(2-thien-2'-yl-2-oxoethyl)-3-[2-(benzoyloxy)ethylamino carbonyl]-pyridinium bromide or other cosmetically acceptable salts thereof,
- 25 (al) 1-(4-ethoxy-2, 4-dioxobutyl)-3-(2-(benzoyloxy)ethylamino carbonyl)-pyridinium chloride or other cosmetically acceptable salts thereof and
- (am) 1-(2-thien-2'-yl-2-oxoethyl)-3-[1-oxo-1-(2-methoxy carbonyl) pyridyl] hydrazino pyridinium chloride or other cosmetically acceptable salts thereof.

39. The method as claimed in claim 24, wherein said compound is selected from the group consisting of the following compounds:

- (an) 1-[1-(2-thien-2'-yl-2-oxoethyl)-5-aminocarbonyl-3-carbonyl pyridinium]-2-[1-(2-thien-2'-yl-2-oxoethyl)-3-carbonyl pyridinium] hydrazine dichloride or other
- 5 cosmetically acceptable salts thereof,
- (ao) 1-(2-thien-2'-yl-2-oxoethyl)-3-(trifluoromethanesulfonyl hydrazino carbonyl) - pyridinium bromide or other cosmetically acceptable salts thereof,
- (ap) 1-[1-(2-thien-2'-yl-2-oxoethyl)-6-methyl-3-carbonyl pyridinium]-2-[1-(2-thien-2'-yl-2-oxoethyl)-3-carbonyl pyridinium] hydrazine dichloride or other
- 10 cosmetically acceptable salts thereof,
- (aq) N,N'-bis[3-carbonyl-1-(2-(5-methyl-thien-2-yl)-2-oxoethyl) pyridinium] hydrazine dichloride or other cosmetically acceptable salts thereof,

- (ar) N,N'-bis[3-carbonyl-1-(2-(5-chloro-thien-2-yl)-2-oxoethyl) pyridinium] hydrazine dichloride or other cosmetically acceptable salts thereof,
- 15 (as) 1-(2-thien-2'-yl-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl)-6-methyl pyridinium bromide or other cosmetically acceptable salts thereof,
- (at) N,N'-bis[3-carbonyl-1-(2-(4-nitro-thien-2-yl)-2-oxoethyl)pyridinium] hydrazine dichloride or other cosmetically acceptable salts thereof,
- (au) 1-(2-phenylamino-2-oxoethyl)-3-(phenyl hydrazino carbonyl) pyridinium chloride or
- 20 other cosmetically acceptable salts thereof,
- (av) 1-(2-(4-nitro-thien-2-yl)-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,
- (aw) 1-(2-(5-nitro-thien-2-yl)-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl) pyridinium chloride or other cosmetically acceptable salts thereof,
- 25 (ax) 1-(2-(5-chloro-thien-2-yl)-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,
- (ay) 1-(2-thien-2'-yl-2-oxoethyl)-3-(ethoxycarbonyl hydrazino carbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,
- (az) 1-(2-thien-2'-yl-2-oxoethyl)-3-(isopropylsulfonyl hydrazino carbonyl) pyridinium
- 30 bromide or other cosmetically acceptable salts thereof,
- (ba) 1-(2-thien-2'-yl-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl)-5-bromo pyridinium bromide or other cosmetically acceptable salts thereof,
- (bb) 1-(2-(2-ethoxy carbonyl pyrrolidin-1-yl)-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl) pyridinium chloride or other cosmetically acceptable salts thereof,
- 35 (bc) 1-(2-(5-methyl-thien-2-yl)-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl) pyridinium chloride or other cosmetically acceptable salts thereof,
- (bd) 1-(2-(4-carboethoxy-thiazolidin-3-yl)-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl) pyridinium chloride or other cosmetically acceptable salts thereof,
- (be) 1-(2-(4-benzyl piperidin-1-yl)-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl)
- 40 pyridinium chloride or other cosmetically acceptable salts thereof,
- (bf) N,N-bis[3-carbonyl-1-(2-(2-ethoxycarbonyl pyrrolidin-1-yl)-2-oxoethyl) pyridinium] hydrazine dichloride or other cosmetically acceptable salts thereof,
- (bg) 1-(2-phenylamino-2-oxoethyl)-4-[2-(benzoyloxy) ethylamino carbonyl]

- pyridinium chloride or other cosmetically acceptable salts thereof,
- 45 (bh) 1-(2-thien-2-yl-2-oxoethyl)-3-(phenyl hydrazino carbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,
- (bi) 1-(2-thien-2-yl-2-oxoethyl)-3-(p-methoxy phenyl sulfonyl hydrazino carbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,
- (bj) 1-(2-ethoxy-2-oxoethyl)-3-(phenyl aminocarbonyl hydrazino carbonyl ) pyridinium
- 50 bromide or other cosmetically acceptable salts thereof,
- (bk) 1-(2-ethoxy-2-oxoethyl)-3-(p-toluene sulfonyl hydrazino carbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,
- (bl) 1-(2-phenyl-2-oxoethyl)-3-(phenylamino carbonyl hydrazino carbonyl ) pyridinium bromide or other cosmetically acceptable salts thereof,
- 55 (bm) 1-(2-phenylamino-2-oxoethyl)-3-(benzyl sulfonyl hydrazino carbonyl) pyridinium chloride or other cosmetically acceptable salts thereof,
- (bn) 1-(2-phenyl-2-oxoethyl)-4-(methanesulfonyl hydrazino carbonyl ) pyridinium bromide or other cosmetically acceptable salts thereof,
- (bo) 1-(2-phenyl-2-oxoethyl)-3-(phenyl hydrazino carbonyl ) pyridinium bromide or
- 60 other cosmetically acceptable salts thereof,
- (bp) 1-(2-ethoxy-2-oxoethyl)-4-[2-(benzoyloxy) ethyl amino carbonyl ] pyridinium bromide or other cosmetically acceptable salts thereof,
- (bq) 1-(2-ethoxy-2-oxoethyl)-3-(phenyl hydrazino carbonyl ) pyridinium bromide or other cosmetically acceptable salts thereof,
- 65 (br) 1-(2-phenyl-2-oxoethyl)-3-(p-methoxyphenyl sulfonyl hydrazino carbonyl ) pyridinium bromide or other cosmetically acceptable salts thereof,
- (bs) 1-(2-phenyl-2-oxoethyl)- 4-[2-(benzoyloxy) ethyl amino carbonyl] pyridinium bromide or other cosmetically acceptable salts thereof and
- (bt) 1-(2-ethoxy-2-oxoethyl)- 4-(p-methanesulfonyl hydrazino carbonyl ) pyridinium
- 70 bromide or other cosmetically acceptable salts thereof

40. . The method as claimed in claim 24, wherein said compound is selected from the group consisting of the following compounds:

(bu) 3-carboxylamino-1- (2-(2, 4-dichlorophenyl)-2-oxoethyl)-pyridinium bromide or

- other cosmetically acceptable salts thereof,
- 5 (bv) 3-(tetrahydrobenzothiazol-2-yl) aminocarbonyl -1-(2-(2, 4-dichlorophenyl)-2-oxoethyl)-pyridinium bromide or other cosmetically acceptable salts thereof,
- (bw) 1-(2-phenyl-2-oxoethyl)-3-((2-hydroxyethyl) aminocarbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,
- (bx) 3-carbonylamino-1- (2-thien-2'-yl-2-oxoethyl)-pyridinium bromide or other
- 10 cosmetically acceptable salts thereof,
- (by) 1-(2-phenyl -2-oxoethyl)-3-((p-sulfonamidophenylene) aminocarbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,
- (bz) 1-(2-ethoxy-2-oxoethyl)-3-((2-hydroxyethyl) aminocarbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,
- 15 (ca) 1-(2-phenyl-2-oxoethyl)-3-(isopropylloxycarbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,
- (cb) 1-(2-oxopropyl)-3-((2-hydroxyethyl) aminocarbonyl) pyridinium chloride or other cosmetically acceptable salts thereof,
- (cc) 1-(2-thien-2'-yl-2-oxoethyl)-3-((2-hydroxyethyl) aminocarbonyl) pyridinium
- 20 bromide or other cosmetically acceptable salts thereof,
- (cd) 1-(2-(2,4 - dichlorophenyl-2-oxoethyl) -3- (isopropylloxycarbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,
- (ce) 1- (2-phenyl - 2- oxoethyl) - 3- ((4-methylthiazol - 2 -yl) aminocarbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,
- 25 (cf) 1-(2- phenylamino -2- oxoethyl ) -3- (n-butyloxycarbonyl) pyridinium chloride or other cosmetically acceptable salts thereof,
- (cg) 1- (2- phenylamino - 2- oxoethyl)- 3- ((2-hydroxyethyl) aminocarbonyl) - pyridinium chloride or other cosmetically acceptable salts thereof,
- (ch) 1- (2- (2,4 - dichlorophenyl ) - 2-oxoethyl) - 3- (n - butoxycarbonyl) pyridinium
- 30 bromide or other cosmetically acceptable salts thereof,
- (ci) 1-(2 - (2, 4 - dichlorophenyl) - 2-oxoethyl) - 3- (n-butylamino-carbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,
- (cj) 1-(2-phenyl-2-oxoethyl)-3-(1-phenyl-1-oxomethyl) pyridinium bromide or other cosmetically acceptable salts thereof, and

- 35 (ck) 1- (2 phenyl - 2-oxoethyl) - 3- (methoxycarbonyl) pyridinium bromide or other cosmetically acceptable salts thereof

41. The method as claimed in claim 25, wherein said compound is selected from the group consisting of the following compounds:

- (a) N,N'-bis[3-carbonyl-1-(2-thien -2'- yl -2-oxoethyl) -3-pyridinium] hydrazine dibromide or other cosmetically acceptable salts thereof,
- 5 (b) 1-(2-ethoxy -2-oxoethyl) -3-(2-(2-pyridyl)hydrazinocarbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,
- (c) 1-(2-ethoxy -2-oxoethyl) -3-(2-(benzoyloxy) ethylamino carbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,
- (d)N,N'-bis[3-carbonyl-1-(2-phenyl-2-oxoethyl)pyridinium]hydrazine dibromide or other  
10 cosmetically acceptable salts thereof,
- (e)1-(2-phenyl-2-oxoethyl)-3-(hydrazinocarbonyl)pyridinium bromide or other cosmetically acceptable salts thereof,
- (f) 1-(2-thien -2'-yl -2-oxoethyl) -3-(methanesulfonyl hydrazinocarbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,
- 15 (g) N,N'-bis[3-carbonyl-1-(2-(2',4'-dichlorophenyl)-2-oxoethyl) pyridinium] hydrazine dibromide or other cosmetically acceptable salts thereof,
- (h) 1-(2-phenyl -2-oxoethyl) -3-(methanesulfonyl hydrazinocarbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,
- (i) 1-(2-ethoxy -2-oxoethyl) -3-(methanesulfonyl hydrazinocarbonyl) pyridinium bromide  
20 or other cosmetically acceptable salts thereof,
- (j)1-(2-phenyl-2-oxoethyl)-3-(phenylsulfonylhydrazino carbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,
- (k)1-(2-phenyl-2-oxoethyl)-2-chloro-3-(phenylsulfonyl hydrazino carbonyl) pyridinium bromide or other cosmetically acceptable salts thereof ,
- 25 (l) 1-(2-thien -2'-yl -2-oxoethyl)-4-(2-(benzoyloxy) ethyl aminocarbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,
- (m)1- (2- (2',4'- dichlorophenyl) -2-oxoethyl) -3-(2- (benzoyloxy) ethylaminocarbonyl)



- pyridinium bromide or other cosmetically acceptable salts thereof,
- (n) 1-(2-phenyl-2-oxoethyl)-3-(2-(acetoxymethyl)ethoxycarbonyl)pyridinium
- 30 bromide or other cosmetically acceptable salts thereof and
- (o) 1-(2-ethoxy-2-oxoethyl)-3-(2-(benzoyloxymethyl)ethoxycarbonyl)pyridinium bromide or other cosmetically acceptable salts thereof
42. The method as claimed in claim 25, wherein said compound is selected from the group of the following compounds:
- (p) 1-(2-phenylamino-2-oxoethyl)-4-(phenylsulfonylhydrazinocarbonyl)pyridinium chloride or other cosmetically acceptable salts thereof,
- 5 (q) 1-(2-(2,4-dichlorophenyl)-2-oxoethyl)-3-(2-methoxyethoxycarbonyl)pyridinium bromide or other cosmetically acceptable salts thereof,
- (r) 1-(2-phenylamino-2-oxoethyl)-3-(2-(benzoyloxymethyl)ethylaminocarbonyl)pyridinium chloride or other cosmetically acceptable salts thereof,
- (s) 1-(2-thien-2'-yl-2-oxoethyl)-3-(phenylaminocarbonylhydrazinocarbonyl)pyridinium
- 10 bromide or other cosmetically acceptable salts thereof,
- (t) 1-(2-phenyl-2-oxoethyl)-3-(2-(acetoxymethyl)ethylaminocarbonyl)pyridinium bromide or other cosmetically acceptable salts thereof,
- (u) 1-(2-phenylamino-2-oxoethyl)-3-(phenylsulfonylhydrazinocarbonyl)pyridinium chloride or other cosmetically acceptable salts thereof,
- 15 (v) 1-(2-phenylamino-2-oxoethyl)-3-(4-methylphenylsulfonylhydrazinocarbonyl)pyridinium chloride or other cosmetically acceptable salts thereof,
- (w) 1-(2-phenyl-2-oxoethyl)-3-(2-(benzoyloxymethyl)ethoxycarbonyl)pyridinium bromide or other cosmetically acceptable salts thereof,
- (x) 1-(2-thien-2'-yl-2-oxoethyl)-3-(phenylcarbonylhydrazinocarbonyl)
- 20 pyridinium bromide or other cosmetically acceptable salts thereof,
- (y) 1-(2-ethoxy-2-oxoethyl)-3-((phenylmethyl)sulfonylhydrazinocarbonyl)pyridinium bromide or other cosmetically acceptable salts thereof and
- (z) 1-(2-phenyl-2-oxoethyl)-3-((phenylmethyl)sulfonylhydrazinocarbonyl)pyridinium bromide or other cosmetically acceptable salts thereof.

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43. The method as claimed in claim 25, wherein said compound is selected from the group consisting of the following compounds:

(aa) N, N' - bis [3-carbonyl-1-(2-furan-2'-yl-2-oxoethyl) pyridinium] hydrazine dibromide or other cosmetically acceptable salts thereof,

5 (ab) N,N'-bis [3-carbonyl -1- (2-thien-2'-yl-2-oxoethyl) pyridinium] hydrazine dichloride or other cosmetically acceptable salts thereof,

(ac) N,N'-bis-[3-carbonyl-1-(2-cyclopropylamino-2-oxoethyl) pyridinium] hydrazine dichloride or other cosmetically acceptable salts thereof,

10 (ad) 1-(2',4'-dichlorophenyl-2-oxoethyl)-3-(2-methoxyethyl aminocarbonyl)-pyridinium bromide or other cosmetically acceptable salts thereof,

(ae) 1-(2-thien-2'-yl-2-oxoethyl)-3-((2-methoxy ethyl) amino carbonyl)-5-bromo pyridinium chloride or other cosmetically acceptable salts thereof,

(af) 1-(2-thien-2'-yl-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl) pyridinium chloride or other cosmetically acceptable salts thereof,

15 (ag) 1-(2-thien-2'yl-2-oxoethyl)-3-(2-(2-chloro-3-pyridoylhydrazinocarbonyl) - pyridinium chloride or other cosmetically acceptable salts thereof,

(ah) 1-(2-cyclopropylamino-2-oxoethyl)-3-(2-methoxyethylaminocarbonyl) -pyridinium chloride or other cosmetically acceptable salts thereof,

20 (ai) 1-(2-isopropylamino-2-oxoethyl)-3-(2-methylsulfonylhydrazinocarbonyl)- pyridinium chloride or other cosmetically acceptable salts thereof,

(aj) 1-(2-phenylamino-2-oxo ethyl)-3-({2-(1-oxo-3-cyclohexyl)-ethyl} - hydrazinocarbonyl)-pyridinium bromide or other cosmetically acceptable salts thereof,

(ak) 1-(2-thien-2'-yl-2-oxoethyl)-3-[2-(benzoyloxy)ethylamino carbonyl]-pyridinium bromide or other cosmetically acceptable salts thereof,

25 (al) 1-(4-ethoxy-2, 4-dioxobutyl)-3-(2-(benzoxyl oxy)ethylamino carbonyl)-pyridinium chloride or other cosmetically acceptable salts thereof and

(am) 1-(2-thien-2'-yl-2-oxoethyl)-3-[1-oxo-1-(2-methoxy carbonyl) pyridyl] hydrazino pyridinium chloride or other cosmetically acceptable salts thereof.

44. The method as claimed in claim 25, wherein said compound is selected from the group consisting of the following compounds:

- (an) 1-[1-(2-thien-2'-yl-2-oxoethyl)-5-aminocarbonyl-3-carbonyl pyridinium]-2-[1-(2-thien-2'-yl-2-oxoethyl)-3-carbonyl pyridinium] hydrazine dichloride or other  
5 cosmetically acceptable salts thereof,
- (ao) 1-(2-thien-2'-yl-2-oxoethyl)-3-(trifluoromethanesulfonyl hydrazino carbonyl) - pyridinium bromide or other cosmetically acceptable salts thereof,
- (ap) 1-[1-(2-thien-2'-yl-2-oxoethyl)-6-methyl-3-carbonyl pyridinium]-2-[1-(2-thien-2'-yl-2-oxoethyl)-3-carbonyl pyridinium] hydrazine dichloride or other  
10 cosmetically acceptable salts thereof,
- (aq) N,N'-bis[3-carbonyl-1-(2-(5-methyl-thien-2-yl)-2-oxoethyl) pyridinium] hydrazine dichloride or other cosmetically acceptable salts thereof,
- (ar) N,N'-bis[3-carbonyl-1-(2-(5-chloro-thien-2-yl)-2-oxoethyl) pyridinium] hydrazine dichloride or other cosmetically acceptable salts thereof,
- 15 (as) 1-(2-thien-2'-yl-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl)-6-methyl pyridinium bromide or other cosmetically acceptable salts thereof,
- (at) N,N'-bis[3-carbonyl-1-(2-(4-nitro-thien-2-yl)-2-oxoethyl)pyridinium] hydrazine dichloride or other cosmetically acceptable salts thereof,
- (au) 1-(2-phenylamino-2-oxoethyl)-3-(phenyl hydrazino carbonyl) pyridinium chloride or  
20 other cosmetically acceptable salts thereof,
- (av) 1-(2-(4-nitro-thien-2-yl)-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,
- (aw) 1-(2-(5-nitro-thien-2-yl)-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl) pyridinium chloride or other cosmetically acceptable salts thereof,
- 25 (ax) 1-(2-(5-chloro-thien-2-yl)-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,
- (ay) 1-(2-thien-2'-yl-2-oxoethyl)-3-(ethoxycarbonyl hydrazino carbonyl) pyridinium bromide or other cosmetically acceptable salts thereof,
- (az) 1-(2-thien-2'-yl-2-oxoethyl)-3-(isopropylsulfonyl hydrazino carbonyl) pyridinium  
30 bromide or other cosmetically acceptable salts thereof,
- (ba) 1-(2-thien-2'-yl-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl)-5-bromo pyridinium bromide or other cosmetically acceptable salts thereof,
- (bb) 1-(2-(2-ethoxy carbonyl pyrrolidin-1-yl)-2-oxoethyl)-3-(methanesulfonyl hydrazino

carbonyl) pyridinium chloride or other cosmetically acceptable salts thereof,

(bc) 1-(2-(5-methyl-thien-2-yl)-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl)

35 pyridinium chloride or other cosmetically acceptable salts thereof,

(bd) 1-(2-(4- carboethoxy -thiazolidin-3-yl)-2-oxoethyl) -3-(methanesulfonyl hydrazino

carbonyl ) pyridinium chloride or other cosmetically acceptable salts thereof,

(be) 1-(2-(4-benzyl piperidin-1-yl)-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl)

pyridinium chloride or other cosmetically acceptable salts thereof,

40 (bf) N,N(bis[3-carbonyl-1-(2-(2-ethoxycarbonyl pyrrolidin-1-yl)-2-oxoethyl)

pyridinium] hydrazine dichloride or other cosmetically acceptable salts thereof,

(bg) 1-(2-phenylamino-2-oxoethyl)-4-[ 2-(benzoyloxy) ethylamino carbonyl ]

pyridinium chloride or other cosmetically acceptable salts thereof,

(bh) 1-(2-thien-2(-yl-2-oxoethyl)-3-(phenyl hydrazino carbonyl) pyridinium bromide or

45 other cosmetically acceptable salts thereof,

(bi) 1-(2-thien-2(-yl-2-oxoethyl)-3-(p-methoxy phenyl sulfonyl hydrazino carbonyl)

pyridinium bromide or other cosmetically acceptable salts thereof,

(bj) 1-(2-ethoxy-2-oxoethyl)-3-(phenyl aminocarbonyl hydrazino carbonyl ) pyridinium

bromide or other cosmetically acceptable salts thereof,

50 (bk) 1-(2-ethoxy-2-oxoethyl)-3-(p-toluene sulfonyl hydrazino carbonyl) pyridinium

bromide or other cosmetically acceptable salts thereof,

(bl) 1-(2-phenyl-2-oxoethyl)-3-(phenylamino carbonyl hydrazino carbonyl ) pyridinium

bromide or other cosmetically acceptable salts thereof,

(bm) 1-(2-phenylamino-2-oxoethyl)-3-(benzyl sulfonyl hydrazino carbonyl)

55 pyridiniumchloride or other cosmetically acceptable salts thereof,

(bn) 1-(2-phenyl-2-oxoethyl)-4-(methanesulfonyl hydrazino carbonyl ) pyridinium

bromide or other cosmetically acceptable salts thereof,

(bo) 1-(2-phenyl-2-oxoethyl)-3-(phenyl hydrazino carbonyl ) pyridinium bromide

or other cosmetically acceptable salts thereof,

60 (bp) 1 -(2-ethoxy-2-oxoethyl)-4-[2-(benzoyloxy) ethyl amino carbonyl ] pyridinium

bromide or other cosmetically acceptable salts thereof,

(bq) 1-(2-ethoxy-2-oxoethyl)-3-(phenyl hydrazino carbonyl ) pyridinium bromide or

other cosmetically acceptable salts thereof,

- (br) 1-(2-phenyl-2-oxoethyl)-3-(p-methoxyphenyl sulfonyl hydrazino carbonyl )  
 65 pyridinium bromide or other cosmetically acceptable salts thereof,  
 (bs) 1-(2-phenyl-2-oxoethyl)- 4-[2-(benzoyloxy) ethyl amino carbonyl] pyridinium  
 bromide or other cosmetically acceptable salts thereof and  
 (bt) 1-(2-ethoxy-2-oxoethyl)- 4-(p-methanesulfonyl hydrazino carbonyl ) pyridinium  
 bromide or other cosmetically acceptable salts thereof

45. The method as claimed in claim 25, wherein said compound is selected from the  
 group consisting of the following compounds:

- (bu) 3-carboxylamino-1- (2-(2, 4-dichlorophenyl)-2-oxoethyl)-pyridinium bromide or  
 other cosmetically acceptable salts thereof,  
 5 (bv) 3-(tetrahydrobenzothiazol-2-yl) aminocarbonyl -1-(2-(2, 4-dichlorophenyl)-2-  
 oxoethyl)-pyridinium bromide or other cosmetically acceptable salts thereof,  
 (bw) 1-(2-phenyl-2-oxoethyl)-3-((2-hydroxyethyl) aminocarbonyl) pyridinium bromide  
 or other cosmetically acceptable salts thereof,  
 (bx) 3-carboxylamino-1- (2-thien-2'-yl-2-oxoethyl)-pyridinium bromide or other  
 10 cosmetically acceptable salts thereof,  
 (by) 1-(2-phenyl -2-oxoethyl)-3-((p-sulfonamidophenylene) aminocarbonyl) pyridinium  
 bromide or other cosmetically acceptable salts thereof,  
 (bz) 1-(2-ethoxy-2-oxoethyl)-3-((2-hydroxyethyl) aminocarbonyl) pyridinium bromide or  
 other cosmetically acceptable salts thereof,  
 15 (ca) 1-(2-phenyl-2-oxoethyl)-3-(isopropylloxycarbonyl) pyridinium bromide or other  
 cosmetically acceptable salts thereof,  
 (cb) 1-(2-oxopropyl)-3-((2-hydroxyethyl) aminocarbonyl) pyridinium chloride or other  
 cosmetically acceptable salts thereof,  
 (cc) 1-(2-thien-2'-yl-2-oxoethyl)-3-((2-hydroxyethyl) aminocarbonyl) pyridinium  
 20 bromide or other cosmetically acceptable salts thereof,  
 (cd) 1-(2-(2,4 - dichlorophenyl-2-oxoethyl) -3- (isopropylloxycarbonyl) pyridinium  
 bromide or other cosmetically acceptable salts thereof,  
 (ce) 1- (2-phenyl - 2- oxoethyl) - 3- ((4-methylthiazol - 2 -yl) aminocarbonyl) pyridinium  
 bromide or other cosmetically acceptable salts thereof,

- 25 (cf) 1-(2- phenylamino -2- oxoethyl ) -3- (n-butyloxycarbonyl) pyridinium chloride or  
other cosmetically acceptable salts thereof,  
(cg) 1- (2- phenylamino - 2- oxoethyl)- 3- ((2-hydroxyethyl) aminocarbonyl) -  
pyridinium chloride or other cosmetically acceptable salts thereof,  
(ch) 1- (2- (2,4 - dichlorophenyl ) - 2-oxoethyl) - 3- (n - butoxycarbonyl) pyridinium  
30 bromide or other cosmetically acceptable salts thereof,  
(ci) 1-(2 - (2, 4 - dichlorophenyl) - 2-oxoethyl) - 3- (n-butylamino-carbonyl) pyridinium  
bromide or other cosmetically acceptable salts thereof,  
(cj) 1-(2-phenyl-2-oxoethyl)-3-(1-phenyl-1-oxomethyl) pyridinium bromide or other  
cosmetically acceptable salts thereof, and  
35 (ck) 1- (2 phenyl - 2-oxoethyl) - 3- (methoxycarbonyl) pyridinium bromide or other  
cosmetically acceptable salts thereof

46. The cosmetic composition as claimed in claim 1, wherein the concentration of said  
compound is between 0.005 to 50% by weight.

47. The cosmetic composition as claimed in claim 26, wherein the concentration of said  
compound is between 0.25% to 5.0% by weight.

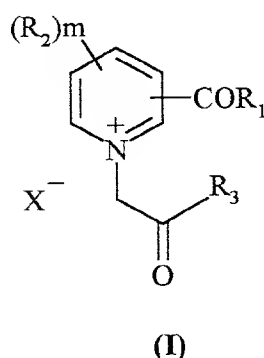
48. A cosmetic composition comprising the compound of the Formula (I) as defined in  
claim 1 or other cosmetically acceptable salts thereof and one or more agents selected  
from the group consisting of: emollients, emulsifiers, agents modifying skin  
differentiation and/or proliferation and/or pigmentation, antiparasitic

- 5 agents, preservatives, alcohols, fragrances, thickening agents, humectants, colorants,  
silicones, exfoliating agents, keratolytic agents, retinoids, sunscreens,  
skin penetration enhancers, anti-inflammatory agents, vitamins, thrombolytic agents,  
anticoagulating agents, capillary protectants, additional antioxidants, hormones, antibacterial  
agents, antiviral agents, steroidal anti-inflammatory agents, anaesthetics, anti-seborrhoeic  
10 agents, anti-dandruff agents, anti-acne agents, anti-free radical agents, analgesics,  
lipophilic compounds, antihistamine agents, insect repellants, skin cooling compounds,

lubricants and anti-fungal agents or mixtures thereof.

49. A method of cosmetic application comprising applying an effective amount of a composition as claimed in claim 48.

50. A pharmaceutical composition for scavenging free radicals in the body cell of a mammal comprising a compound of formula (I) or pharmaceutically acceptable salts thereof.



in admixture with pharmaceutically acceptable carrier, diluent, excipient or solvent

wherein

$R_1$  is  $-R_4-R_5$  or  $-N(R_7)N(R_7)R_9$  and  $Y-R_{11}$ ;

$R_4$  is selected from the group consisting of  $-N(R_7)R_6O-$ ,

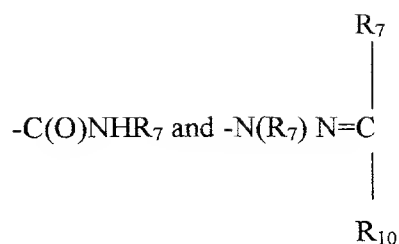
$-N(R_7)R_6N(R_7)-$ ,

$-OR_6O-$ , and  $-OR_6N(R_7)-$ ,

where  $R_6$  is alkyl;

$R_5$  is selected from the group consisting of alkyl, aryl including heteroaryl,  $-COR_7$ ,  $-$

$SO_2R_7$ ,  $-C(S)NHR_7$ ,  $-C(NH)NHR_7$ ,  $-COR_{10}$ ,



where  $\text{R}_7$  is selected from the group consisting of H, alkyl and aryl including heteroaryl,  
provided  $\text{R}_7$  may be the same or different for  $\text{R}_1$  and  $\text{R}_3$  in the same compound;

$\text{R}_2$  is selected from the group consisting of F, Cl, Br, I,  $\text{OR}_7$ ,  $\text{NO}_2$ , alkyl, aryl including heteroaryl, formyl, acyl,  $\text{C}(\text{O})\text{NR}_7\text{R}_{10}$ ,  $\text{C}(\text{O})\text{OR}_7$ ,  $\text{NR}_7\text{R}_{10}$ ,  $\text{N}=\text{C}(\text{R}_7)(\text{R}_{10})$ ,  $\text{SR}_7$ ,  $\text{SO}_2\text{NH}_2$ ,  $\text{SO}_2$  alkyl and  $\text{SO}_2$ aryl;

$m$  is 0, 1 or 2;

$\text{R}_3$  is selected from the group consisting of  $\text{R}_7$ ,  $\text{OR}_7$ ,  $\text{N}(\text{R}_7)(\text{R}_{10})$ ,  $\text{N}=\text{C}(\text{R}_7)(\text{R}_{10})$ ,  $\text{N}(\text{R}_7)\text{N}(\text{R}_7)(\text{R}_{10})$ ,  $\text{N}(\text{R}_7)\text{N}=\text{C}(\text{R}_7)(\text{R}_{10})$  and  $\text{CH}(\text{R}_7)\text{C}(\text{O})\text{R}_8$

where  $\text{R}_8$  is selected from the group consisting of  $\text{R}_7$ ,  $\text{OR}_7$  and  $\text{NR}_7\text{R}_{10}$ ;

$\text{R}_9$  is selected from the group consisting of hydrogen, alkyl, aryl including heteroaryl,  $\text{C}(\text{O})\text{R}_{10}$ ,  $-\text{SO}_2\text{R}_{10}$ ,  $\text{C}(\text{S})\text{NHR}_{10}$ ,  $\text{C}(\text{NH})\text{NH}(\text{R}_{10})$  and  $\text{C}(\text{O})\text{NHR}_{10}$ ;

$\text{R}_{10}$  is selected from the group consisting of H, alkyl and aryl, including heteroaryl and in each case may be the same or different from substituent  $\text{R}_7$ , provided  $\text{R}_{10}$  may be the same or different for  $\text{R}_1$  and  $\text{R}_3$  in the same compound;

$\text{Y}$  is selected from oxygen, NH,  $\text{NR}_{12}$  and null

$\text{R}_{11}$  and  $\text{R}_{12}$  are independently selected from hydrogen, alkyl and aryl

$\text{X}$  is selected from group consisting of a halide ion, acetate ion, perchlorate ion, sulfonate ion, oxalate ion, citrate ion, tosylate ion, maleate ion, mesylate ion, carbonate ion, sulfite ion, phosphoric hydrogen ion, phosphonate ion, phosphate ion,  $\text{BF}_4^-$  and  $\text{PF}_6^-$ ;



with proviso that,

60

(i) when two alkyl groups are present on the same carbon or nitrogen, they may be linked together to form a cyclic structure;

(ii) the nitrogen of heteroaryl ring of  $R_{10}$ , when present, may be quaternized;

(iii) when  $R_3$  is  $OR_7$  and  $R_1$  is  $-NHNH_2$  then  $R_7$  is not alkyl and

65 (iv) when  $R_3$  is  $OR_7$ ,  $R_1$  is  $N(R_7)(NR_7)R_9$  and  $R_9$  is  $C(O)R_{10}$  where  $R_{10}$  is alkyl, then  $R_7$  is not hydrogen.

51. The composition as claimed in claim 50, wherein  $-C(O)R_1$  group of said compound is at position 3 or 4.

52. The composition as claimed in claim 51, wherein  $-C(O)R_1$  group of said compound is at position 3.

53. The composition as claimed in claim 50, wherein for the said compound  $m$  is 0 or 1.

54. The composition as claimed in claim 51, wherein for the said compound  $m$  is 0 or 1.

55. The composition as claimed in claim 52, wherein for the said compound  $m$  is 0 or 1.

56. The composition as claimed in claim 50, wherein for the said compound  $m$  is 0.

57. The composition as claimed in claim 51, wherein for the said compound  $m$  is 0.

58. The composition as claimed in claim 52, wherein for the said compound  $m$  is 0.

59. The composition as claimed in claim 50, wherein for the said compound  $X$  is a halide ion.

60. The composition as claimed in claim 50 comprising compounds selected from the

consisting of

- (a) N,N'-bis[3-carbonyl-1-(2-thien -2'-yl -2-oxoethyl) -3-pyridinium] hydrazine dibromide or other pharmaceutially acceptable salts thereof,
- 5 (b) 1-(2-ethoxy -2-oxoethyl) -3-(2-(2-pyridyl)hydrazinocarbonyl) pyridinium bromide or other pharmaceutially acceptable salts thereof,
- (c) 1-(2-ethoxy -2-oxoethyl) -3-(2-(benzoyloxy) ethylamino carbonyl) pyridinium bromide or other pharmaceutially acceptable salts thereof,
- (d) N,N'-bis[3-carbonyl-1-(2-phenyl-2-oxoethyl)pyridinium]hydrazine dibromide or other
- 10 pharmaceutially acceptable salts thereof,
- (e) 1-(2-phenyl-2-oxoethyl)-3-(hydrazinocarbonyl)pyridinium bromide or other pharmaceutially acceptable salts thereof,
- (f) 1-(2-thien -2'-yl -2-oxoethyl) -3-(methanesulfonyl hydrazinocarbonyl) pyridinium bromide or other pharmaceutially acceptable salts thereof,
- 15 (g) N,N'-bis[3-carbonyl-1-(2-(2',4'-dichlorophenyl)-2-oxoethyl) pyridinium] hydrazine dibromide or other pharmaceutially acceptable salts thereof,
- (h) 1-(2-phenyl -2-oxoethyl) -3-(methanesulfonyl hydrazinocarbonyl) pyridinium bromide or other pharmaceutially acceptable salts thereof,
- (i) 1-(2-ethoxy -2-oxoethyl) -3-(methanesulfonyl hydrazinocarbonyl) pyridinium bromide
- 20 or other pharmaceutially acceptable salts thereof,
- (j) 1-(2-phenyl-2-oxoethyl)-3-(phenylsulfonylhydrazino carbonyl) pyridinium bromide or other pharmaceutially acceptable salts thereof,
- (k) 1-(2-phenyl-2-oxoethyl)-2-chloro-3-(phenylsulfonyl hydrazino carbonyl) pyridinium bromide or other pharmaceutially acceptable salts thereof ,
- 25 (l) 1-(2-thien -2'-yl -2-oxoethyl)-4-(2-(benzoyloxy) ethyl aminocarbonyl) pyridinium bromide or other pharmaceutially acceptable salts thereof,
- (m) 1- (2- (2',4'- dichlorophenyl) -2-oxoethyl) -3-(2- (benzoyloxy) ethylaminocarbonyl) pyridinium bromide or other pharmaceutially acceptable salts thereof,
- (n) 1-(2-phenyl -2-oxoethyl) -3-(2-(acetoxo) ethyloxy) carbonyl) pyridinium bromide or
- 30 other pharmaceutially acceptable salts thereof and
- (o) 1-(2-ethoxy -2-oxoethyl) -3-(2-(benzoyloxy) ethyloxy carbonyl) pyridinium bromide or other pharmaceutially acceptable salts thereof.

61. The composition as claimed in claim 50 comprising compounds selected from the group consisting of:

(p) 1-(2-phenylamino-2-oxoethyl)-4-(phenylsulfonyl hydrazino carbonyl)pyridinium chloride or other pharmaceutially acceptable salts thereof,

5 (q) 1-(2-(2,4'-dichlorophenyl)-2-oxoethyl)-3-(2(methoxy) ethyloxycarbonyl) pyridinium bromide or other pharmaceutially acceptable salts thereof,

(r) 1-(2-phenylamino-2-oxoethyl)-3-((benzoyloxy) ethylaminocarbonyl) pyridinium chloride or other pharmaceutially acceptable salts thereof,

10 (s) 1-(2-thien-2'-yl-2-oxoethyl)-3-(phenylaminocarbonyl hydrazinocarbonyl) pyridinium bromide or other pharmaceutially acceptable salts thereof,

(t) 1-(2-phenyl-2-oxoethyl)-3-(2-(acetoxo) ethylaminocarbonyl) pyridinium bromide or other pharmaceutially acceptable salts thereof,

(u) 1-(2-phenylamino-2-oxoethyl)-3-(phenyl sulfonyl hydrazino carbonyl) pyridinium chloride or other pharmaceutially acceptable salts thereof,

15 (v) 1-(2-phenylamino-2-oxoethyl)-3-((4-methylphenyl)sulfonyl hydrazinocarbonyl) pyridinium chloride or other pharmaceutially acceptable salts thereof,

(w) 1-(2-phenyl-2-oxoethyl)-3-(2-(benzoyloxy)ethyloxy carbonyl) pyridinium bromide or other pharmaceutially acceptable salts thereof,

20 (x) 1-(2-thien-2'-yl-2-oxoethyl)-3-(phenylcarbonyl hydrazino carbonyl) pyridinium bromide or other pharmaceutially acceptable salts thereof,

(y) 1-(2-ethoxy-2-oxoethyl)-3-((phenylmethyl)sulfonyl hydrazino carbonyl)pyridinium bromide or other pharmaceutially acceptable salts thereof and

(z) 1-(2-phenyl-2-oxoethyl)-3-((phenylmethyl)sulfonyl hydrazino carbonyl)pyridinium bromide or other pharmaceutially acceptable salts thereof.

62. The composition as claimed in claim 50 comprising compounds selected from the group consisting of:

(aa) N, N' - bis [3-carbonyl-1-(2-furan-2'-yl-2-oxoethyl) pyridinium] hydrazine dibromide or other pharmaceutially acceptable salts thereof,

5 (ab) N,N'-bis [3-carbonyl -1- (2-thien-2'-yl-2-oxoethyl) pyridinium] hydrazine dichloride or other pharmaceutially acceptable salts thereof,

(ac) N,N'-bis-[3-carbonyl-1-(2-cyclopropylamino-2-oxoethyl) pyridinium] hydrazine dichloride or other pharmaceutially acceptable salts thereof,

(ad) 1-(2',4'-dichlorophenyl-2-oxoethyl)-3-(2-methoxyethyl aminocarbonyl)-pyridinium

10 bromide or other pharmaceutially acceptable salts thereof,

(ae) 1-(2-thien-2'-yl-2-oxoethyl)-3-((2-methoxy ethyl) amino carbonyl)-5-bromo pyridinium chloride or other pharmaceutially acceptable salts thereof,

(af) 1-(2-thien-2'-yl-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl) pyridinium chloride or other pharmaceutially acceptable salts thereof,

15 (ag) 1-(2-thien-2'-yl-2-oxoethyl)-3-(2-(2-chloro-3-pyridoylhydrazinocarbonyl) - pyridinium chloride or other pharmaceutially acceptable salts thereof,

(ah) 1-(2-cyclopropylamino-2-oxoethyl)-3-(2-methoxyethylaminocarbonyl) -pyridinium chloride or other pharmaceutially acceptable salts thereof,

(ai) 1-(2-isopropylamino-2-oxoethyl)-3-(2-methylsulfonylhydrazinocarbonyl)-  
20 pyridinium chloride or other pharmaceutially acceptable salts thereof,

(aj) 1-(2-phenylamino-2-oxo ethyl)-3-({2-(1-oxo-3-cyclohexyl)-ethyl} - hydrazinocarbonyl)-pyridinium bromide or other pharmaceutially acceptable salts thereof,

(ak) 1-(2-thien-2'-yl-2-oxoethyl)-3-[2-(benzoyloxy)ethylamino carbonyl]-pyridinium

25 bromide or other pharmaceutially acceptable salts thereof,

(al) 1-(4-ethoxy-2, 4-dioxobutyl)-3-(2-(benzoxylloxy)ethylamino carbonyl)-pyridinium chloride or other pharmaceutially acceptable salts thereof and

(am) 1-(2-thien-2'-yl-2-oxoethyl)-3-[1-oxo-1-(2-methoxy carbonyl) pyridyl] hydrazino pyridinium chloride or other pharmaceutially acceptable salts thereof.

63. The composition as claimed in claim 50 comprising compounds selected from the group consisting of:

(an) 1-[1-(2-thien-2'-yl-2-oxoethyl)-5-aminocarbonyl-3-carbonyl pyridinium]-2-[1-(2-thien-2'-yl-2-oxoethyl )-3-carbonyl pyridinium] hydrazine dichloride or other

5 pharmaceutially acceptable salts thereof,

(ao) 1-(2-thien-2'-yl-2-oxoethyl)-3-(trifluoromethanesulfonyl hydrazino carbonyl) - pyridinium bromide or other pharmaceutially acceptable salts thereof,

- (ap) 1-[1-(2-thien-2'-yl-2-oxoethyl)-6-methyl-3-carbonyl pyridinium]-2-[1-(2-thien-2'-yl-2-oxoethyl)-3-carbonyl pyridinium] hydrazine dichloride or other pharmaceutially acceptable salts thereof,
- 10 (aq) N,N'-bis[3-carbonyl-1-(2-(5-methyl-thien-2-yl)-2-oxoethyl) pyridinium] hydrazine dichloride or other pharmaceutially acceptable salts thereof,
- (ar) N,N'-bis[3-carbonyl-1-(2-(5-chloro-thien-2-yl)-2-oxoethyl) pyridinium] hydrazine dichloride or other pharmaceutially acceptable salts thereof,
- 15 (as) 1-(2-thien-2'-yl-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl)-6-methyl pyridinium bromide or other pharmaceutially acceptable salts thereof,
- (at) N,N'-bis[3-carbonyl-1-(2-(4-nitro-thien-2-yl)-2-oxoethyl)pyridinium] hydrazine dichloride or other pharmaceutially acceptable salts thereof,
- (au) 1-(2-phenylamino-2-oxoethyl)-3-(phenyl hydrazino carbonyl) pyridinium chloride or
- 20 other pharmaceutially acceptable salts thereof,
- (av) 1-(2-(4-nitro-thien-2-yl)-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl ) pyridinium bromide or other pharmaceutially acceptable salts thereof,
- (aw) 1-(2-(5-nitro-thien-2-yl)-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl) pyridinium chloride or other pharmaceutially acceptable salts thereof,
- 25 (ax) 1-(2-(5-chloro-thien-2-yl)-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl) pyridinium bromide or other pharmaceutially acceptable salts thereof,
- (ay) 1-(2-thien-2'-yl-2-oxoethyl)-3-(ethoxycarbonyl hydrazino carbonyl) pyridinium bromide or other pharmaceutially acceptable salts thereof,
- (az) 1-(2-thien-2'-yl-2-oxoethyl)-3-(isopropylsulfonyl hydrazino carbonyl) pyridinium
- 30 bromide or other pharmaceutially acceptable salts thereof,
- (ba) 1-(2-thien-2'-yl-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl)-5-bromo pyridinium bromide or other pharmaceutially acceptable salts thereof,
- (bb) 1-(2-(2-ethoxy carbonyl pyrrolidin-1-yl)-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl) pyridinium chloride or other pharmaceutially acceptable salts thereof,
- 35 (bc) 1-(2-(5-methyl-thien-2-yl)-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl) pyridinium chloride or other pharmaceutially acceptable salts thereof,
- (bd) 1-(2-(4- carboethoxy -thiazolidin-3-yl)-2-oxoethyl) -3-(methanesulfonyl hydrazino carbonyl ) pyridinium chloride or other pharmaceutially acceptable salts thereof,

- (be) 1-(2-(4-benzyl piperidin-1-yl)-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl) pyridinium chloride or other pharmaceutically acceptable salts thereof,
- (bf) N,N(-bis[3-carbonyl-1-(2-(2-ethoxycarbonyl pyrrolidin-1-yl)-2-oxoethyl) pyridinium] hydrazine dichloride or other pharmaceutically acceptable salts thereof,
- (bg) 1-(2-phenylamino-2-oxoethyl)-4-[2-(benzoyloxy) ethylamino carbonyl ] pyridinium chloride or other pharmaceutically acceptable salts thereof,
- (bh) 1-(2-thien-2(-yl-2-oxoethyl)-3-(phenyl hydrazino carbonyl) pyridinium bromide or other pharmaceutically acceptable salts thereof,
- (bi) 1-(2-thien-2(-yl-2-oxoethyl)-3-(p-methoxy phenyl sulfonyl hydrazino carbonyl) pyridinium bromide or other pharmaceutically acceptable salts thereof,
- (bj) 1-(2-ethoxy-2-oxoethyl)-3-(phenyl aminocarbonyl hydrazino carbonyl ) pyridinium bromide or other pharmaceutically acceptable salts thereof,
- (bk) 1-(2-ethoxy-2-oxoethyl)-3-(p-toluene sulfonyl hydrazino carbonyl) pyridinium bromide or other pharmaceutically acceptable salts thereof,
- (bl) 1-(2-phenyl-2-oxoethyl)-3-(phenylamino carbonyl hydrazino carbonyl ) pyridinium bromide or other pharmaceutically acceptable salts thereof,
- (bm) 1-(2-phenylamino-2-oxoethyl)-3-(benzyl sulfonyl hydrazino carbonyl) pyridinium chloride or other pharmaceutically acceptable salts thereof,
- (bn) 1-(2-phenyl-2-oxoethyl)-4-(methanesulfonyl hydrazino carbonyl ) pyridinium bromide or other pharmaceutically acceptable salts thereof,
- (bo) 1-(2-phenyl-2-oxoethyl)-3-(phenyl hydrazino carbonyl ) pyridinium bromide or other pharmaceutically acceptable salts thereof,
- (bp) 1-(2-ethoxy-2-oxoethyl)-4-[2-(benzoyloxy) ethyl amino carbonyl ] pyridinium bromide or other pharmaceutically acceptable salts thereof,
- (bq) 1-(2-ethoxy-2-oxoethyl)-3-(phenyl hydrazino carbonyl ) pyridinium bromide or other pharmaceutically acceptable salts thereof,
- (br) 1-(2-phenyl-2-oxoethyl)-3-(p-methoxyphenyl sulfonyl hydrazino carbonyl ) pyridinium bromide or other pharmaceutically acceptable salts thereof,
- (bs) 1-(2-phenyl-2-oxoethyl)- 4-[2-(benzoyloxy) ethyl amino carbonyl] pyridinium bromide or other pharmaceutically acceptable salts thereof and
- (bt) 1-(2-ethoxy-2-oxoethyl)- 4-(p-methanesulfonyl hydrazino carbonyl ) pyridinium

70 bromide or other pharmaceutically acceptable salts thereof.

64. The composition as claimed in claim 50 comprising compounds selected from the group consisting of:

(bu) 3-carboxylamino-1- (2-(2, 4-dichlorophenyl)-2-oxoethyl)-pyridinium bromide or other pharmaceutically acceptable salts thereof,

5 (bv) 3-(tetrahydrobenzothiazol-2-yl) aminocarbonyl -1-(2-(2, 4-dichlorophenyl)-2-oxoethyl)-pyridinium bromide or other pharmaceutically acceptable salts thereof,

(bw) 1-(2-phenyl-2-oxoethyl)-3-((2-hydroxyethyl) aminocarbonyl) pyridinium bromide or other pharmaceutically acceptable salts thereof,

(bx) 3-carboxylamino-1- (2-thien-2'-yl-2-oxoethyl)-pyridinium bromide or other pharmaceutically acceptable salts thereof,

(by) 1-(2-phenyl -2-oxoethyl)-3-((p-sulfonamidophenylene) aminocarbonyl) pyridinium bromide or other pharmaceutically acceptable salts thereof,

(bz) 1-(2-ethoxy-2-oxoethyl)-3-((2-hydroxyethyl) aminocarbonyl) pyridinium bromide or other pharmaceutically acceptable salts thereof,

15 (ca) 1-(2-phenyl-2-oxoethyl)-3-(isopropylloxycarbonyl) pyridinium bromide or other pharmaceutically acceptable salts thereof,

(cb) 1-(2-oxopropyl)-3-((2-hydroxyethyl) aminocarbonyl) pyridinium chloride or other pharmaceutically acceptable salts thereof,

(cc) 1-(2-thien-2'-yl-2-oxoethyl)-3-((2-hydroxyethyl) aminocarbonyl) pyridinium bromide or other pharmaceutically acceptable salts thereof,

(cd) 1-(2-(2,4 - dichlorophenyl)-2-oxoethyl) -3- (isopropylloxycarbonyl) pyridinium bromide or other pharmaceutically acceptable salts thereof,

(ce) 1- (2-phenyl - 2- oxoethyl) - 3- ((4-methylthiazol - 2 -yl) aminocarbonyl) pyridinium bromide or other pharmaceutically acceptable salts thereof,

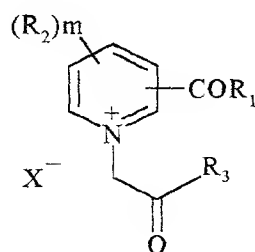
25 (cf) 1-(2- phenylamino -2- oxoethyl ) -3- (n-butyloxycarbonyl) pyridinium chloride or other pharmaceutically acceptable salts thereof,

(cg) 1- (2- phenylamino - 2- oxoethyl)- 3- ((2-hydroxyethyl) aminocarbonyl) - pyridinium chloride or other pharmaceutically acceptable salts thereof,

(ch) 1- (2- (2,4 - dichlorophenyl ) - 2-oxoethyl) - 3- (n - butoxycarbonyl) pyridinium

- 30 bromide or other pharmaceutically acceptable salts thereof,  
 (ci) 1-(2 - (2, 4 - dichlorophenyl) - 2-oxoethyl) - 3- (n-butylamino-carbonyl) pyridinium  
 bromide or other pharmaceutically acceptable salts thereof,  
 (cj) 1-(2-phenyl-2-oxoethyl)-3-(1-phenyl-1-oxomethyl) pyridinium bromide or other  
 pharmaceutically acceptable salts thereof, and  
 35 (ck) 1- (2 phenyl - 2-oxoethyl) - 3- (methoxycarbonyl) pyridinium bromide or other  
 pharmaceutically acceptable salts thereof.

65. A method of scavenging free radical in the body cells comprising administering to a  
 mammal in need of scavenging free radical from its body cells an effective amount of a  
 compound of formula (I) or pharmaceutically acceptable salts thereof and a



pharmaceutically acceptable carrier, diluent, excipient or solvent,  
 wherein

R<sub>1</sub> is -R<sub>4</sub>-R<sub>5</sub> or -N(R<sub>7</sub>) N (R<sub>7</sub>) R<sub>9</sub> and Y-R<sub>11</sub>;

R<sub>4</sub> is selected from the group consisting of -N(R<sub>7</sub>)R<sub>6</sub>O-,

15 -N(R<sub>7</sub>)R<sub>6</sub>N(R<sub>7</sub>),

-OR<sub>6</sub>O, and -OR<sub>6</sub>N(R<sub>7</sub>)-,

where R<sub>6</sub> is alkyl;

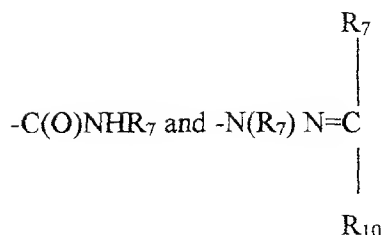
R<sub>5</sub> is selected from the group consisting of alkyl, aryl including heteroaryl, -COR<sub>7</sub>, -

SO<sub>2</sub>R<sub>7</sub>, -C(S) NHR<sub>7</sub>, -C(NH)NHR<sub>7</sub>, -COR<sub>10</sub>,

20



25



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where  $\text{R}_7$  is selected from the group consisting of H, alkyl and aryl including heteroaryl, provided  $\text{R}_7$  may be the same or different for  $\text{R}_1$  and  $\text{R}_3$  in the same compound;

35

$\text{R}_2$  is selected from the group consisting of F, Cl, Br, I,  $\text{OR}_7$ ,  $\text{NO}_2$ , alkyl, aryl including heteroaryl, formyl, acyl,  $\text{C}(\text{O})\text{NR}_7\text{R}_{10}$ ,  $\text{C}(\text{O})\text{OR}_7$ ,  $\text{NR}_7\text{R}_{10}$ ,  $\text{N}=\text{C}(\text{R}_7)(\text{R}_{10})$ ,  $\text{SR}_7$ ,  $\text{SO}_2\text{NH}_2$ ,  $\text{SO}_2$  alkyl and  $\text{SO}_2$  aryl;

40

$m$  is 0, 1 or 2;

$\text{R}_3$  is selected from the group consisting of  $\text{R}_7$ ,  $\text{OR}_7$ ,  $\text{N}(\text{R}_7)(\text{R}_{10})$ ,  $\text{N}=\text{C}(\text{R}_7)(\text{R}_{10})$ ,  $\text{N}(\text{R}_7)\text{N}(\text{R}_7)(\text{R}_{10})$ ,  $\text{N}(\text{R}_7)\text{N}=\text{C}(\text{R}_7)(\text{R}_{10})$  and  $\text{CH}(\text{R}_7)\text{C}(\text{O})\text{R}_8$

where  $\text{R}_8$  is selected from the group consisting of  $\text{R}_7$ ,  $\text{OR}_7$  and  $\text{NR}_7\text{R}_{10}$ ;

45

$\text{R}_9$  is selected from the group consisting of hydrogen, alkyl, aryl including heteroaryl,  $\text{C}(\text{O})\text{R}_{10}$ ,  $-\text{SO}_2\text{R}_{10}$ ,  $\text{C}(\text{S})\text{NHR}_{10}$ ,  $\text{C}(\text{NH})\text{NH}(\text{R}_{10})$  and  $\text{C}(\text{O})\text{NHR}_{10}$ ;

$\text{R}_{10}$  is selected from the group consisting of alkyl and aryl, including heteroaryl and in each case may be the same or different from substituent  $\text{R}_7$ , provided  $\text{R}_{10}$  may be the same or different for  $\text{R}_1$  and  $\text{R}_3$  in the same compound;

$\text{Y}$  is selected from oxygen, NH,  $\text{NR}_{12}$  and null

50

$\text{R}_{11}$  and  $\text{R}_{12}$  are independently selected from hydrogen, alkyl and aryl

$\text{X}$  is selected from group consisting of a halide ion, acetate ion, perchlorate ion, sulfonate ion, oxalate ion, citrate ion, tosylate ion, maleate ion, mesylate ion, carbonate ion, sulfite ion, phosphoric hydrogen ion, phosphonate ion, phosphate ion,  $\text{BF}_4^-$  and  $\text{PF}_6^-$ ; with proviso that,

- 55 (i) when two alkyl groups are present on the same carbon or nitrogen, they may be linked together to form a cyclic structure;
- (ii) the nitrogen of heteroaryl ring of  $R_{10}$ , when present, may be quaternized;
- (iii) when  $R_3$  is  $OR_7$  and  $R_1$  is  $-NHNH_2$  then  $R_7$  is not alkyl and
- (iv) when  $R_3$  is  $OR_7$ ,  $R_1$  is  $N(R_7)(NR_7)R_9$  and  $R_9$  is  $C(O)R_{10}$  where
- 60  $R_{10}$  is alkyl, then  $R_7$  is not hydrogen.

66. The method as claimed in claim 65, comprising compounds selected from the group consisting of;

- (a)  $N,N'$ -bis[3-carbonyl-1-(2-thien-2'-yl-2-oxoethyl)-3-pyridinium] hydrazine dibromide or other pharmaceutically acceptable salts thereof,
- 5 (b) 1-(2-ethoxy-2-oxoethyl)-3-(2-(2-pyridyl)hydrazinocarbonyl) pyridinium bromide or other pharmaceutically acceptable salts thereof,
- (c) 1-(2-ethoxy-2-oxoethyl)-3-(2-(benzoyloxy)ethylamino carbonyl) pyridinium bromide or other pharmaceutically acceptable salts thereof,
- 10 (d)  $N,N'$ -bis[3-carbonyl-1-(2-phenyl-2-oxoethyl)pyridinium]hydrazine dibromide or other pharmaceutically acceptable salts thereof,
- (e) 1-(2-phenyl-2-oxoethyl)-3-(hydrazinocarbonyl)pyridinium bromide or other pharmaceutically acceptable salts thereof,
- (f) 1-(2-thien-2'-yl-2-oxoethyl)-3-(methanesulfonyl hydrazinocarbonyl) pyridinium bromide or other pharmaceutically acceptable salts thereof,
- 15 (g)  $N,N'$ -bis[3-carbonyl-1-(2-(2',4'-dichlorophenyl)-2-oxoethyl) pyridinium] hydrazine dibromide or other pharmaceutically acceptable salts thereof,
- (h) 1-(2-phenyl-2-oxoethyl)-3-(methanesulfonyl hydrazinocarbonyl) pyridinium bromide or other pharmaceutically acceptable salts thereof,
- (i) 1-(2-ethoxy-2-oxoethyl)-3-(methanesulfonyl hydrazinocarbonyl) pyridinium bromide
- 20 or other pharmaceutically acceptable salts thereof,
- (j) 1-(2-phenyl-2-oxoethyl)-3-(phenylsulfonylhydrazino carbonyl) pyridinium bromide or other pharmaceutically acceptable salts thereof,
- (k) 1-(2-phenyl-2-oxoethyl)-2-chloro-3-(phenylsulfonyl hydrazino carbonyl) pyridinium bromide or other pharmaceutically acceptable salts thereof,

- 25 (l) 1-(2-thien-2'-yl-2-oxoethyl)-4-(2-(benzoyloxy) ethyl aminocarbonyl) pyridinium  
bromide or other pharmaceutically acceptable salts thereof,  
(m) 1-(2-(2,4'-dichlorophenyl)-2-oxoethyl)-3-(2-(benzoyloxy) ethylaminocarbonyl)  
pyridinium bromide or other pharmaceutically acceptable salts thereof,  
(n) 1-(2-phenyl-2-oxoethyl)-3-(2-(acetoxy) ethyloxy) carbonyl) pyridinium bromide or  
30 other pharmaceutically acceptable salts thereof and  
(o) 1-(2-ethoxy-2-oxoethyl)-3-(2-(benzoyloxy) ethyloxy carbonyl) pyridinium bromide  
or other pharmaceutically acceptable salts thereof.

67. The method as claimed in claim 65, comprising compounds selected from the group  
consisting of:

- (p) 1-(2-phenylamino-2-oxoethyl)-4-(phenylsulfonyl hydrazino carbonyl)pyridinium  
chloride or other pharmaceutically acceptable salts thereof,  
5 (q) 1-(2-(2,4'-dichlorophenyl)-2-oxoethyl)-3-(2(methoxy) ethyloxy carbonyl)  
pyridinium bromide or other pharmaceutically acceptable salts thereof,  
(r) 1-(2-phenylamino-2-oxoethyl)-3-((benzoyloxy) ethylaminocarbonyl) pyridinium  
chloride or other pharmaceutically acceptable salts thereof,  
(s) 1-(2-thien-2'-yl-2-oxoethyl)-3-(phenylaminocarbonyl hydrazinocarbonyl) pyridinium  
10 bromide or other pharmaceutically acceptable salts thereof,  
(t) 1-(2-phenyl-2-oxoethyl)-3-(2-(acetoxy) ethylaminocarbonyl) pyridinium bromide or  
other pharmaceutically acceptable salts thereof,  
(u) 1-(2-phenylamino-2-oxoethyl)-3-(phenylsulfonyl hydrazino carbonyl) pyridinium  
chloride or other pharmaceutically acceptable salts thereof,  
15 (v) 1-(2-phenylamino-2-oxoethyl)-3-((4-methylphenyl)sulfonyl hydrazinocarbonyl)  
pyridinium chloride or other pharmaceutically acceptable salts thereof,  
(w) 1-(2-phenyl-2-oxoethyl)-3-(2-(benzoyloxy)ethyloxy carbonyl) pyridinium bromide or  
other pharmaceutically acceptable salts thereof,  
(x) 1-(2-thien-2'-yl-2-oxoethyl)-3-(phenylcarbonyl hydrazino carbonyl)  
20 pyridinium bromide or other pharmaceutically acceptable salts thereof,  
(y) 1-(2-ethoxy-2-oxoethyl)-3-((phenylmethyl)sulfonyl hydrazino carbonyl) pyridinium  
bromide or other pharmaceutically acceptable salts thereof and

(z) 1-(2-phenyl-2-oxoethyl)-3-((phenylmethyl)sulfonyl hydrazino carbonyl)pyridinium bromide or other pharmaceutically acceptable salts thereof.

68. The method as claimed in claim 65, comprising compounds selected from the group consisting of:

- (aa) N, N' - bis [3-carbonyl-1-(2-furan-2'-yl-2-oxoethyl) pyridinium] hydrazine dibromide or other pharmaceutically acceptable salts thereof,
- 5 (ab) N,N'-bis [3-carbonyl -1- (2-thien-2'-yl-2-oxoethyl) pyridinium] hydrazine dichloride or other pharmaceutically acceptable salts thereof,
- (ac) N,N'-bis-[3-carbonyl-1-(2-cyclopropylamino-2-oxoethyl) pyridinium] hydrazine dichloride or other pharmaceutically acceptable salts thereof,
- (ad) 1-(2',4'-dichlorophenyl-2-oxoethyl)-3-(2-methoxyethyl aminocarbonyl)-pyridinium  
10 bromide or other pharmaceutically acceptable salts thereof,
- (ae) 1-(2-thien-2'-yl-2-oxoethyl)-3-((2-methoxy ethyl) amino carbonyl)-5-bromo pyridinium chloride or other pharmaceutically acceptable salts thereof,
- (af) 1-(2-thien-2'-yl-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl) pyridinium chloride or other pharmaceutically acceptable salts thereof,
- 15 (ag) 1-(2-thien-2'yl-2-oxoethyl)-3-(2-(2-chloro-3-pyridoylhydrazinocarbonyl) - pyridinium chloride or other pharmaceutically acceptable salts thereof,
- (ah) 1-(2-cyclopropylamino-2-oxoethyl)-3-(2-methoxyethylaminocarbonyl) -pyridinium chloride or other pharmaceutically acceptable salts thereof,
- (ai) 1-(2-isopropylamino-2-oxoethyl)-3-(2-methylsulfonylhydrazinocarbonyl)-  
20 pyridinium chloride or other pharmaceutically acceptable salts thereof,
- (aj) 1-(2-phenylamino-2-oxo ethyl)-3-({2-(1-oxo-3-cyclohexyl)-ethyl} - hydrazinocarbonyl)-pyridinium bromide or other pharmaceutically acceptable salts thereof,
- (ak) 1-(2-thien-2'-yl-2-oxoethyl)-3-[2-(benzoyloxy)ethylamino carbonyl]-pyridinium  
25 bromide or other pharmaceutically acceptable salts thereof,
- (al) 1-(4-ethoxy-2, 4-dioxobutyl)-3-(2-(benzoxyl oxy)ethylamino carbonyl)-pyridinium chloride or other pharmaceutically acceptable salts thereof and
- (am) 1-(2-thien-2'-yl-2-oxoethyl)-3-[1-oxo-1-(2-methoxy carbonyl) pyridyl] hydrazino

pyridinium chloride or other pharmaceutically acceptable salts thereof.

69. The method as claimed in claim 65 comprising compounds selected from the group consisting of:

(an) 1-[1-(2-thien-2'-yl-2-oxoethyl)-5-aminocarbonyl-3-carbonyl pyridinium]-2-[1-(2-thien-2'-yl-2-oxoethyl)-3-carbonyl pyridinium] hydrazine dichloride or other

5 pharmaceutically acceptable salts thereof,

(ao) 1-(2-thien-2'-yl-2-oxoethyl)-3-(trifluoromethanesulfonyl hydrazino carbonyl) - pyridinium bromide or other pharmaceutically acceptable salts thereof,

(ap) 1-[1-(2-thien-2'-yl-2-oxoethyl)-6-methyl-3-carbonyl pyridinium]-2-[1-(2-thien-2'-yl-2-oxoethyl)-3-carbonyl pyridinium] hydrazine dichloride or other

10 pharmaceutically acceptable salts thereof,

(aq) N,N'-bis[3-carbonyl-1-(2-(5-methyl-thien-2-yl)-2-oxoethyl) pyridinium] hydrazine dichloride or other pharmaceutically acceptable salts thereof,

(ar) N,N'-bis[3-carbonyl-1-(2-(5-chloro-thien-2-yl)-2-oxoethyl) pyridinium] hydrazine dichloride or other pharmaceutically acceptable salts thereof,

15 (as) 1-(2-thien-2'-yl-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl)-6-methyl pyridinium bromide or other pharmaceutically acceptable salts thereof,

(at) N,N'-bis[3-carbonyl-1-(2-(4-nitro-thien-2-yl)-2-oxoethyl)pyridinium] hydrazine dichloride or other pharmaceutically acceptable salts thereof,

20 (au) 1-(2-phenylamino-2-oxoethyl)-3-(phenyl hydrazino carbonyl) pyridinium chloride or other pharmaceutically acceptable salts thereof,

(av) 1-(2-(4-nitro-thien-2-yl)-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl) pyridinium bromide or other pharmaceutically acceptable salts thereof,

(aw) 1-(2-(5-nitro-thien-2-yl)-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl) pyridinium chloride or other pharmaceutically acceptable salts thereof,

25 (ax) 1-(2-(5-chloro-thien-2-yl)-2-oxoethyl)-3-(methanesulfonyl hydrazino Carbonyl) pyridinium bromide or other pharmaceutically acceptable salts thereof,

(ay) 1-(2-thien-2'-yl-2-oxoethyl)-3-(ethoxycarbonyl hydrazino carbonyl) pyridinium bromide or other pharmaceutically acceptable salts thereof,

(az) 1-(2-thien-2'-yl-2-oxoethyl)-3-(isopropylsulfonyl hydrazino carbonyl) pyridinium

- 30 bromide or other pharmaceutically acceptable salts thereof,  
 (ba) 1-(2-thien-2'-yl-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl)  
 -5-bromo pyridinium bromide or other pharmaceutically acceptable salts thereof,  
 (bb) 1-(2-(2-ethoxy carbonyl pyrrolidin-1-yl)-2-oxoethyl)-3-(methanesulfonyl hydrazino  
 carbonyl) pyridinium chloride or other pharmaceutically acceptable salts thereof,  
 35 (bc) 1-(2-(5-methyl-thien-2-yl)-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl)  
 pyridinium chloride or other pharmaceutically acceptable salts thereof,  
 (bd) 1-(2-(4-[carbethoxy] carboethoxy -thiazolidin-3-yl)-2-oxoethyl) -3-(methanesulfonyl  
 hydrazino carbonyl ) pyridinium chloride or other pharmaceutically acceptable salts  
 thereof,  
 40 (be) 1-(2-(4-benzyl piperidin-1-yl)-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl)  
 pyridinium chloride or other pharmaceutically acceptable salts thereof,  
 (bf) N,N(-bis[3-carbonyl-1-(2-(2-ethoxycarbonyl pyrrolidin-1-yl)-2-oxoethyl)  
 pyridinium] hydrazine dichloride or other pharmaceutically acceptable salts thereof,  
 (bg) 1-(2-phenylamino-2-oxoethyl)-4 -[ 2-(benzoyloxy) ethylamino carbonyl ]  
 45 pyridinium chloride or other pharmaceutically acceptable salts thereof,  
 (bh) 1-(2-thien-2(-yl-2-oxoethyl)-3-(phenyl hydrazino carbonyl) pyridinium bromide or  
 other pharmaceutically acceptable salts thereof,  
 (bi) 1-(2-thien-2(-yl-2-oxoethyl)-3-(p-methoxy phenyl sulfonyl hydrazino carbonyl)  
 pyridinium bromide or other pharmaceutically acceptable salts thereof,  
 50 (bj) 1-(2-ethoxy-2-oxoethyl)-3-(phenyl aminocarbonyl hydrazino carbonyl ) pyridinium  
 bromide or other pharmaceutically acceptable salts thereof,  
 (bk) 1-(2-ethoxy-2-oxoethyl)-3-(p-toluene sulfonyl hydrazino carbonyl) pyridinium  
 bromide or other pharmaceutically acceptable salts thereof,  
 (bl) 1-(2-phenyl-2-oxoethyl)-3-(phenylamino carbonyl hydrazino carbonyl ) pyridinium  
 55 bromide or other pharmaceutically acceptable salts thereof,  
 (bm) 1-(2-phenylamino-2-oxoethyl)-3-(benzyl sulfonyl hydrazino carbonyl)  
 pyridiniumchloride or other pharmaceutically acceptable salts thereof,  
 (bn) 1-(2-phenyl-2-oxoethyl)-4-(methanesulfonyl hydrazino carbonyl ) pyridinium  
 bromide or other pharmaceutically acceptable salts thereof,  
 60 (bo) 1-(2-phenyl-2-oxoethyl)-3-(phenyl hydrazino carbonyl ) pyridinium bromide or

other pharmaceutically acceptable salts thereof,

(bp) 1-(2-ethoxy-2-oxoethyl)-4-[2-(benzoyloxy) ethyl amino carbonyl ] pyridinium bromide or other pharmaceutically acceptable salts thereof,

(bq) 1-(2-ethoxy-2-oxoethyl)-3-(phenyl hydrazino carbonyl ) pyridinium bromide or  
65 other pharmaceutically acceptable salts thereof,

(br) 1-(2-phenyl-2-oxoethyl)-3-(p-methoxyphenyl sulfonyl hydrazino carbonyl ) pyridinium bromide or other pharmaceutically acceptable salts thereof,

(bs) 1-(2-phenyl-2-oxoethyl)- 4-[2-(benzoyloxy) ethyl amino carbonyl] pyridinium bromide or other pharmaceutically acceptable salts thereof and

70 (bt) 1-(2-ethoxy-2-oxoethyl)- 4-(p-methanesulfonyl hydrazino carbonyl)pyridinium bromide or other pharmaceutically acceptable salts thereof.

70. The method as claimed in claim 65, comprising compounds selected from the group consisting of:

(bu) 3-carboxylamino-1- (2-(2, 4-dichlorophenyl)-2-oxoethyl)-pyridinium bromide or other pharmaceutically acceptable salts thereof,

5 (bv) 3-(tetrahydrobenzothiazol-2-yl) aminocarbonyl -1-(2-(2, 4-dichlorophenyl)-2-oxoethyl)-pyridinium bromide or other pharmaceutically acceptable salts thereof,

(bw) 1-(2-phenyl-2-oxoethyl)-3-((2-hydroxyethyl) aminocarbonyl) pyridinium bromide or other pharmaceutically acceptable salts thereof,

(bx) 3-carboxylamino-1- (2-thien-2'-yl-2-oxoethyl)-pyridinium bromide or other  
10 pharmaceutically acceptable salts thereof,

(by) 1-(2-phenyl -2-oxoethyl)-3-((p-sulfonamidophenylene) aminocarbonyl) pyridinium bromide or other pharmaceutically acceptable salts thereof,

(bz) 1-(2-ethoxy-2-oxoethyl)-3-((2-hydroxyethyl) aminocarbonyl) pyridinium bromide or other pharmaceutically acceptable salts thereof,

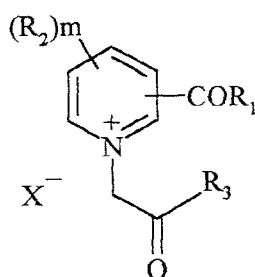
15 (ca) 1-(2-phenyl-2-oxoethyl)-3-(isopropylloxycarbonyl) pyridinium bromide or other pharmaceutically acceptable salts thereof,

(cb) 1-(2-oxopropyl)-3-((2-hydroxyethyl) aminocarbonyl) pyridinium chloride or other pharmaceutically acceptable salts thereof,

(cc) 1-(2-thien-2'-yl-2-oxoethyl)-3-((2-hydroxyethyl) aminocarbonyl) pyridinium

- 20 bromide or other pharmaceutically acceptable salts thereof,  
 (cd) 1-(2-(2,4 - dichlorophenyl-2-oxoethyl) -3- (isopropoxyloxycarbonyl) pyridinium  
 bromide or other pharmaceutically acceptable salts thereof,  
 (ce) 1- (2-phenyl - 2- oxoethyl) - 3- ((4-methylthiazol - 2 -yl) aminocarbonyl) pyridinium  
 bromide or other pharmaceutically acceptable salts thereof,  
 25 (cf) 1-(2- phenylamino -2- oxoethyl ) -3- (n-butyloxycarbonyl) pyridinium chloride or  
 other pharmaceutically acceptable salts thereof,  
 (cg) 1- (2- phenylamino - 2- oxoethyl)- 3- ((2-hydroxyethyl) aminocarbonyl) -  
 pyridinium chloride or other pharmaceutically acceptable salts thereof,  
 (ch) 1- (2- (2,4 - dichlorophenyl ) - 2-oxoethyl) - 3- (n - butoxycarbonyl) pyridinium  
 30 bromide or other pharmaceutically acceptable salts thereof,  
 (ci) 1-(2 - (2, 4 - dichlorophenyl) - 2-oxoethyl) - 3- (n-butylamino-carbonyl) pyridinium  
 bromide or other pharmaceutically acceptable salts thereof,  
 (cj) 1-(2-phenyl-2-oxoethyl)-3-(1-phenyl-1-oxomethyl) pyridinium bromide or other  
 pharmaceutically acceptable salts thereof, and  
 35 (ck) 1- (2 phenyl - 2-oxoethyl) - 3- (methoxycarbonyl) pyridinium bromide or other  
 pharmaceutically acceptable salts thereof.

71. A method of treating diseases caused by accumulation of free radicals in the body  
 cells of a mammal comprising treating a mammal affected by such disease with an  
 effective amount of a compound of formula (I)



(I)

or its pharmaceutically acceptable salts and a pharmaceutically acceptable carrier,  
 diluent, excipient or solvent,

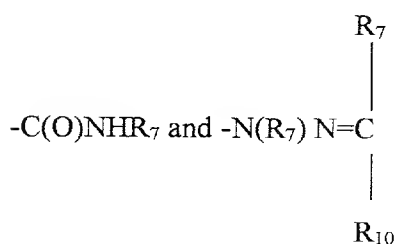


wherein

- 15  $R_1$  is  $-R_4-R_5$  or  $-N(R_7) N (R_7) R_9$  and  $Y-R_{11}$ ;  
 $R_4$  is selected from the group consisting of  $-N(R_7)R_6O-$ ,  
 $-N(R_7)R_6N(R_7)$ ,  
 $-OR_6O$ , and  $-OR_6N(R_7)-$ ,

where  $R_6$  is alkyl;

- 20  $R_5$  is selected from the group consisting of alkyl, aryl including heteroaryl,  $-COR_7$ ,  $-SO_2R_7$ ,  $-C(S) NHR_7$ ,  $-C(NH)NHR_7$ ,  $-COR_{10}$ ,



where  $R_7$  is selected from the group consisting of H, alkyl and aryl including heteroaryl,  
 30 provided  $R_7$  may be the same or different for  $R_1$  and  $R_3$  in the same compound;  
 $R_2$  is selected from the group consisting of F, Cl, Br, I,  $OR_7$ ,  $NO_2$ , alkyl, aryl including  
 heteroaryl, formyl, acyl,  $C(O)NR_7R_{10}$ ,  $C(O)OR_7$ ,  $NR_7R_{10}$ ,  $N=C(R_7)(R_{10})$ ,  $SR_7$ ,  $SO_2NH_2$ ,  
 $SO_2$  alkyl and  $SO_2$ aryl;

- 35  $m$  is 0, 1 or 2;

$R_3$  is selected from the group consisting of  $R_7$ ,  $OR_7$ ,  $N(R_7) (R_{10})$ ,  $N=C(R_7) (R_{10})$ ,  $N(R_7)$   
 $N(R_7)$

- 40  $(R_{10})$ ,  $N(R_7) N=C(R_7) (R_{10})$  and  $CH(R_7)C(O)R_8$

where  $R_8$  is selected from the group consisting of  $R_7$ ,  $OR_7$  and  $NR_7R_{10}$ ;

$R_9$  is selected from the group consisting of hydrogen, alkyl, aryl including heteroaryl,  
 $C(O)R_{10}$ ,  $-SO_2R_{10}$ ,  $C(S)NHR_{10}$ ,  $C(NH) NH (R_{10})$  and  $C(O) NHR_{10}$ ;

- 45  $R_{10}$  is selected from the group consisting of H, alkyl and aryl, including heteroaryl and in each case may be the same or different from substituent  $R_7$ , provided  $R_{10}$  may be the same or different for  $R_1$  and  $R_3$  in the same compound;

Y is selected from oxygen, NH,  $NR_{12}$  and null

- 50  $R_{11}$  and  $R_{12}$  are independently selected from hydrogen, alkyl and aryl

X is selected from group consisting of a halide ion, acetate ion, perchlorate ion, sulfonate ion, oxalate ion, citrate ion, tosylate ion, maleate ion, mesylate ion, carbonate ion, sulfite ion, phosphoric hydrogen ion, phosphonate ion, phosphate ion,  $BF_4^-$  and  $PF_6^-$ ;

- 55 with proviso that,

(i) when two alkyl groups are present on the same carbon or nitrogen, they may be linked together to form a cyclic structure;

(ii) the nitrogen of heteroaryl ring of  $R_{10}$ , when present, may be quaternized;

- 60 (iii) when  $R_3$  is  $OR_7$  and  $R_1$  is  $-NHNH_2$  then  $R_7$  is not alkyl and

(iv) when  $R_3$  is  $OR_7$ ,  $R_1$  is  $N(R_7)(NR_7)R_9$  and  $R_9$  is  $C(O)R_{10}$  where  $R_{10}$  is alkyl, then  $R_7$  is not hydrogen.

72. The method as claimed in claim 71 comprising compounds selected from the group consisting of:

(a) N,N'-bis[3-carbonyl-1-(2-thien-2'-yl-2-oxoethyl)-3-pyridinium] hydrazine dibromide or other pharmaceutically acceptable salts thereof,

- 5 (b) 1-(2-ethoxy-2-oxoethyl)-3-(2-(2-pyridyl)hydrazinocarbonyl) pyridinium bromide or other pharmaceutically acceptable salts thereof,

(c) 1-(2-ethoxy-2-oxoethyl)-3-(2-(benzoyloxy) ethylamino carbonyl) pyridinium bromide or other pharmaceutically acceptable salts thereof,

- (d) N,N'-bis[3-carbonyl-1-(2-phenyl-2-oxoethyl)pyridinium]hydrazine dibromide or other  
10 pharmaceutically acceptable salts thereof,

(e) 1-(2-phenyl-2-oxoethyl)-3-(hydrazinocarbonyl)pyridinium bromide or other

pharmaceutically acceptable salts thereof,

(f) 1-(2-thien -2'-yl -2-oxoethyl) -3-(methanesulfonyl hydrazinocarbonyl) pyridinium bromide or other pharmaceutically acceptable salts thereof,

15 (g) N,N'-bis[3-carbonyl-1-(2-(2',4'-dichlorophenyl)-2-oxoethyl) pyridinium] hydrazine dibromide or other pharmaceutically acceptable salts thereof,

(h) 1-(2-phenyl -2-oxoethyl) -3-(methanesulfonyl hydrazinocarbonyl) pyridinium bromide or other pharmaceutically acceptable salts thereof,

20 (i) 1-(2-ethoxy -2-oxoethyl) -3-(methanesulfonyl hydrazinocarbonyl) pyridinium bromide or other pharmaceutically acceptable salts thereof,

(j) 1-(2-phenyl-2-oxoethyl)-3-(phenylsulfonylhydrazino carbonyl) pyridinium bromide or other pharmaceutically acceptable salts thereof,

(k) 1-(2-phenyl-2-oxoethyl)-2-chloro-3-(phenylsulfonyl hydrazino carbonyl) pyridinium bromide or other pharmaceutically acceptable salts thereof ,

25 (l) 1-(2-thien -2'-yl -2-oxoethyl)-4-(2-(benzoyloxy) ethyl aminocarbonyl) pyridinium bromide or other pharmaceutically acceptable salts thereof,

(m) 1-(2-(2',4'- dichlorophenyl) -2-oxoethyl) -3-(2-( benzoyloxy) ethylaminocarbonyl) pyridinium bromide or other pharmaceutically acceptable salts thereof,

30 (n) 1-(2-phenyl -2-oxoethyl) -3-(2-(acetoxy) ethyloxy) carbonyl) pyridinium bromide or other pharmaceutically acceptable salts thereof and

(o) 1-(2-ethoxy -2-oxoethyl) -3-(2-(benzoyloxy) ethyloxy carbonyl) pyridinium bromide or other pharmaceutically acceptable salts thereof.

73. The method as claimed in claim 71 comprising compounds selected from the group consisting of:

(p) 1-(2-phenylamino-2-oxoethyl)-4-(phenylsulfonyl hydrazino carbonyl)pyridinium chloride or other pharmaceutically acceptable salts thereof,

5 (q) 1-(2-(2',4'-dichlorophenyl)-2-oxoethyl)-3-(2(methoxy) ethyloxycarbonyl) pyridinium bromide or other pharmaceutically acceptable salts thereof,

(r) 1-(2-phenylamino-2-oxoethyl)-3-((benzoyloxy) ethylaminocarbonyl) pyridinium chloride or other pharmaceutically acceptable salts thereof,

(s) 1-(2-thien-2'-yl-2-oxoethyl)-3-(phenylaminocarbonyl hydrazinocarbonyl) pyridinium

- 10 bromide or other pharmaceutically acceptable salts thereof,
- (t) 1-(2-phenyl-2-oxoethyl)-3-(2-(acetoxo) ethylaminocarbonyl) pyridinium bromide or other pharmaceutically acceptable salts thereof,
- (u) 1-(2-phenylamino-2-oxoethyl)-3-(phenyl sulfonyl hydrazino carbonyl) pyridinium chloride or other pharmaceutically acceptable salts thereof,
- 15 (v) 1-(2-phenylamino-2-oxoethyl)-3-((4-methylphenyl)sulfonyl hydrazinocarbonyl) pyridinium chloride or other pharmaceutically acceptable salts thereof,
- (w) 1-(2-phenyl-2-oxoethyl)-3-(2-(benzoyloxy)ethyloxy carbonyl) pyridinium bromide or other pharmaceutically acceptable salts thereof,
- (x) 1-(2-thien-2'-yl-2-oxoethyl)-3-(phenylcarbonyl hydrazino carbonyl)
- 20 pyridinium bromide or other pharmaceutically acceptable salts thereof,
- (y) 1-(2-ethoxy-2-oxoethyl)-3-((phenylmethyl)sulfonyl hydrazino carbonyl) pyridinium bromide or other pharmaceutically acceptable salts thereof and
- (z) 1-(2-phenyl-2-oxoethyl)-3-((phenylmethyl)sulfonyl hydrazino carbonyl)pyridinium bromide or other pharmaceutically acceptable salts thereof.

74. The method as claimed in claim 71 comprising compounds selected from the group consisting of:

- (aa) N, N' - bis [3-carbonyl-1-(2-furan-2'-yl-2-oxoethyl) pyridinium] hydrazine dibromide or other pharmaceutically acceptable salts thereof,
- 5 (ab) N,N'-bis [3-carbonyl -1- (2-thien-2'-yl-2-oxoethyl) pyridinium] hydrazine dichloride or other pharmaceutically acceptable salts thereof,
- (ac) N,N'-bis-[3-carbonyl-1-(2-cyclopropylamino-2-oxoethyl) pyridinium] hydrazine dichloride or other pharmaceutically acceptable salts thereof,
- (ad) 1-(2',4'-dichlorophenyl-2-oxoethyl)-3-(2-methoxyethyl aminocarbonyl)-pyridinium
- 10 bromide or other pharmaceutically acceptable salts thereof,
- (ae) 1-(2-thien-2'-yl-2-oxoethyl)-3-((2-methoxy ethyl) amino carbonyl)-5-bromo pyridinium chloride or other pharmaceutically acceptable salts thereof,
- (af) 1-(2-thien-2'-yl-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl) pyridinium chloride or other pharmaceutically acceptable salts thereof,
- 15 (ag) 1-(2-thien-2'-yl-2-oxoethyl)-3-(2-(2-chloro-3-pyridoylhydrazinocarbonyl) -

pyridinium chloride or other pharmaceutically acceptable salts thereof,

(ah) 1-(2-cyclopropylamino-2-oxoethyl)-3-(2-methoxyethylaminocarbonyl)

-pyridinium chloride or other pharmaceutically acceptable salts thereof,

(ai) 1-(2-isopropylamino-2-oxoethyl)-3-(2-methylsulfonylhydrazinocarbonyl)-

20 pyridinium chloride or other pharmaceutically acceptable salts thereof,

(aj) 1-(2-phenylamino-2-oxo ethyl)-3-( {2-(1-oxo-3-cyclohexyl)-ethyl} -

hydrazinocarbonyl)-pyridinium bromide or other pharmaceutically acceptable salts thereof,

(ak) 1-(2-thien-2'-yl-2-oxoethyl)-3-[2-(benzoyloxy)ethylamino carbonyl]-

25 pyridinium bromide or other pharmaceutically acceptable salts thereof,

(al) 1-(4-ethoxy-2, 4-dioxobutyl)-3-(2-(benzoyloxy)ethylamino carbonyl)-pyridinium chloride or other pharmaceutically acceptable salts thereof and

(am) 1-(2-thien-2'-yl-2-oxoethyl)-3-[1-oxo-1-(2-methoxy carbonyl) pyridyl] hydrazino pyridinium chloride or other pharmaceutically acceptable salts thereof.

75. The method as claimed in claim 71 comprising compounds selected from the group consisting of:

(an) 1-[1-(2-thien-2'-yl-2-oxoethyl)-5-aminocarbonyl-3-carbonyl pyridinium]-2-[1-(2-thien-2'-yl-2-oxoethyl)-3-carbonyl pyridinium] hydrazine dichloride or other

5 pharmaceutically acceptable salts thereof,

(ao) 1-(2-thien-2'-yl-2-oxoethyl)-3-(trifluoromethanesulfonyl hydrazino carbonyl) - pyridinium bromide or other pharmaceutically acceptable salts thereof,

(ap) 1-[1-(2-thien-2'-yl-2-oxoethyl)-6-methyl-3-carbonyl pyridinium]-2-[1-(2-thien-2'-yl-2-oxoethyl)-3-carbonyl pyridinium] hydrazine dichloride or other

10 pharmaceutically acceptable salts thereof,

(aq) N,N'-bis[3-carbonyl-1-(2-(5-methyl-thien-2-yl)-2-oxoethyl) pyridinium] hydrazine dichloride or other pharmaceutically acceptable salts thereof,

(ar) N,N'-bis[3-carbonyl-1-(2-(5-chloro-thien-2-yl)-2-oxoethyl) pyridinium] hydrazine dichloride or other pharmaceutically acceptable salts thereof,

15 (as) 1-(2-thien-2'-yl-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl)-6-methyl pyridinium bromide or other pharmaceutically acceptable salts thereof,

- (at) N,N'-bis[3-carbonyl-1-(2-(4-nitro-thien-2-yl)-2-oxoethyl)pyridinium] hydrazine dichloride or other pharmaceutically acceptable salts thereof,
- (au) 1-(2-phenylamino-2-oxoethyl)-3-(phenyl hydrazino carbonyl) pyridinium chloride or  
 20 other pharmaceutically acceptable salts thereof,
- (av) 1-(2-(4-nitro-thien-2-yl)-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl ) pyridinium bromide or other pharmaceutically acceptable salts thereof,
- (aw) 1-(2-(5-nitro-thien-2-yl)-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl) pyridinium chloride or other pharmaceutically acceptable salts thereof,
- 25 (ax) 1-(2-(5-chloro-thien-2-yl)-2-oxoethyl)-3-(methanesulfonyl hydrazino Carbonyl) pyridinium bromide or other pharmaceutically acceptable salts thereof,
- (ay) 1-(2-thien-2'-yl-2-oxoethyl)-3-(ethoxycarbonyl hydrazino carbonyl) pyridinium bromide or other pharmaceutically acceptable salts thereof,
- (az) 1-(2-thien-2'-yl-2-oxoethyl)-3-(isopropylsulfonyl hydrazino carbonyl) pyridinium  
 30 bromide or other pharmaceutically acceptable salts thereof,
- (ba) 1-(2-thien-2'-yl-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl) -5-bromo pyridinium bromide or other pharmaceutically acceptable salts thereof,
- (bb) 1-(2-(2-ethoxy carbonyl pyrrolidin-1-yl)-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl) pyridinium chloride or other pharmaceutically acceptable salts thereof,
- 35 (bc) 1-(2-(5-methyl-thien-2-yl)-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl) pyridinium chloride or other pharmaceutically acceptable salts thereof,
- (bd) 1-(2-(4- carboethoxy -thiazolidin-3-yl)-2-oxoethyl) -3-(methanesulfonyl hydrazino carbonyl ) pyridinium chloride or other pharmaceutically acceptable salts thereof,
- (be) 1-(2-(4-benzyl piperidin-1-yl)-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl)  
 40 pyridinium chloride or other pharmaceutically acceptable salts thereof,
- (bf) N,N(-bis[3-carbonyl-1-(2-(2-ethoxycarbonyl pyrrolidin-1-yl)-2-oxoethyl) pyridinium] hydrazine dichloride or other pharmaceutically acceptable salts thereof,
- (bg) 1-(2-phenylamino-2-oxoethyl)-4 -[ 2-(benzoyloxy) ethylamino carbonyl ] pyridinium chloride or other pharmaceutically acceptable salts thereof,
- 45 (bh) 1-(2-thien-2(-yl-2-oxoethyl)-3-(phenyl hydrazino carbonyl) pyridinium bromide or other pharmaceutically acceptable salts thereof,
- (bi) 1-(2-thien-2(-yl-2-oxoethyl)-3-(p-methoxy phenyl sulfonyl hydrazino carbonyl)

pyridinium bromide or other pharmaceutically acceptable salts thereof,

(bj) 1-(2-ethoxy-2-oxoethyl)-3-(phenyl aminocarbonyl hydrazino carbonyl ) pyridinium

50 bromide or other pharmaceutically acceptable salts thereof,

(bk) 1-(2-ethoxy-2-oxoethyl)-3-(p-toluene sulfonyl hydrazino carbonyl) pyridinium

bromide or other pharmaceutically acceptable salts thereof,

(bl) 1-(2-phenyl-2-oxoethyl)-3-(phenylamino carbonyl hydrazino carbonyl ) pyridinium

bromide or other pharmaceutically acceptable salts thereof,

55 (bm) 1-(2-phenylamino-2-oxoethyl)-3-(benzyl sulfonyl hydrazino carbonyl)

pyridiniumchloride or other pharmaceutically acceptable salts thereof,

(bn) 1-(2-phenyl-2-oxoethyl)-4-(methanesulfonyl hydrazino carbonyl ) pyridinium

bromide or other pharmaceutically acceptable salts thereof,

(bo) 1-(2-phenyl-2-oxoethyl)-3-(phenyl hydrazino carbonyl ) pyridinium bromide or

60 other pharmaceutically acceptable salts thereof,

(bp) 1 -(2-ethoxy-2-oxoethyl)-4-[2-(benzoyloxy) ethyl amino carbonyl ] pyridinium

bromide or other pharmaceutically acceptable salts thereof,

(bq) 1-(2-ethoxy-2-oxoethyl)-3-(phenyl hydrazino carbonyl ) pyridinium bromide or  
other pharmaceutically acceptable salts thereof,

65 (br) 1-(2-phenyl-2-oxoethyl)-3-(p-methoxyphenyl sulfonyl hydrazino carbonyl )

pyridinium bromide or other pharmaceutically acceptable salts thereof,

(bs) 1-(2-phenyl-2-oxoethyl)- 4-[2-(benzoyloxy) ethyl amino carbonyl] pyridinium

bromide or other pharmaceutically acceptable salts thereof and

(bt) 1-(2-ethoxy-2-oxoethyl)- 4-(p-methanesulfonyl hydrazino carbonyl ) pyridinium

70 bromide or other pharmaceutically acceptable salts thereof.

76. The method as claimed in claim 71 comprising compounds selected from the group consisting of:

(bu) 3-carboxylamino-1- (2-(2, 4-dichlorophenyl)-2-oxoethyl)-pyridinium bromide or  
other pharmaceutically acceptable salts thereof,

5 (bv) 3-(tetrahydrobenzothiazol-2-yl) aminocarbonyl -1-(2-(2, 4-dichlorophenyl)-2-  
oxoethyl)-pyridinium bromide or other pharmaceutically acceptable salts thereof,

- (bw) 1-(2-phenyl-2-oxoethyl)-3-((2-hydroxyethyl) aminocarbonyl) pyridinium bromide or other pharmaceutically acceptable salts thereof,
- (bx) 3-carbonylamino-1- (2-thien-2'-yl-2-oxoethyl)-pyridinium bromide or other pharmaceutically acceptable salts thereof,
- 10 (by) 1-(2-phenyl -2-oxoethyl)-3-((p-sulfonamidophenylene) aminocarbonyl) pyridinium bromide or other pharmaceutically acceptable salts thereof,
- (bz) 1-(2-ethoxy-2-oxoethyl)-3-((2-hydroxyethyl) aminocarbonyl) pyridinium bromide or other pharmaceutically acceptable salts thereof,
- 15 (ca) 1-(2-phenyl-2-oxoethyl)-3-(isopropylloxycarbonyl) pyridinium bromide or other pharmaceutically acceptable salts thereof,
- (cb) 1-(2-oxopropyl)-3-((2-hydroxyethyl) aminocarbonyl) pyridinium chloride or other pharmaceutically acceptable salts thereof,
- (cc) 1-(2-thien-2'-yl-2-oxoethyl)-3-((2-hydroxyethyl) aminocarbonyl) pyridinium bromide or other pharmaceutically acceptable salts thereof,
- 20 (cd) 1-(2-(2,4 - dichlorophenyl-2-oxoethyl) -3- (isopropylloxycarbonyl) pyridinium bromide or other pharmaceutically acceptable salts thereof,
- (ce) 1- (2-phenyl - 2- oxoethyl) - 3- ((4-methylthiazol - 2 -yl) aminocarbonyl) pyridinium bromide or other pharmaceutically acceptable salts thereof,
- 25 (cf) 1-(2- phenylamino -2- oxoethyl ) -3- (n-butyloxycarbonyl) pyridinium chloride or other pharmaceutically acceptable salts thereof,
- (cg) 1- (2- phenylamino - 2- oxoethyl)- 3- ((2-hydroxyethyl) aminocarbonyl) - pyridinium chloride or other pharmaceutically acceptable salts thereof,
- (ch) 1- (2- (2,4 - dichlorophenyl ) - 2-oxoethyl) - 3- (n - butoxycarbonyl) pyridinium bromide or other pharmaceutically acceptable salts thereof,
- 30 (ci) 1-(2 - (2, 4 - dichlorophenyl) - 2-oxoethyl) - 3- (n-butylamino-carbonyl) pyridinium bromide or other pharmaceutically acceptable salts thereof,
- (cj) 1-(2-phenyl-2-oxoethyl)-3-(1-phenyl-1-oxomethyl) pyridinium bromide or other pharmaceutically acceptable salts thereof, and
- 35 (ck) 1- (2 phenyl - 2-oxoethyl) - 3- (methoxycarbonyl) pyridinium bromide or other pharmaceutically acceptable salts thereof.



77. The pharmaceutical composition as claimed in claim 50 in the form of an oral formulation.

78. The pharmaceutical composition as claimed in claim 50 wherein said acceptable carrier, diluent, solvent or excipient is selected from the group consisting of starch, lactose, polyvinyl pyrrolidone (K-30), talc and magnesium stearate.

79. The pharmaceutical composition as claimed in claim 50 in the form of a parenteral formulation.

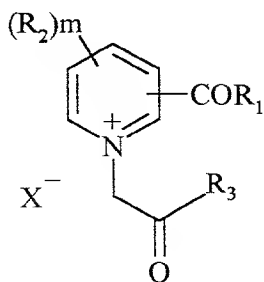
80. A method for the preparation of a parenteral formulation as claimed in claim 79 which comprises dissolving one or more compounds represented by general formula (I), as defined in claim 50, in polyethylene glycol 400 and diluting the solution so obtained, with an isotonic solution or water to a desired concentration.

81. The pharmaceutical composition as claimed in claim 50 in the form of a lotion, oral rinse and toothpaste.

82. The method as claimed in claim 71, wherein the diseases caused to be treated are selected from the group consisting of:

- a) Neurodegenerative disorders,
- b) Diabetes and Diabetic Vascular Complications,
- 5 c) Intestinal Diseases,
- d) Liver Diseases,
- e) Cancers,
- f) Cardiac Diseases,
- g) Ophthalmic Disorders,
- 10 h) HIV Disease,
- i) Respiratory Disease and
- j) Renal Diseases

83. A method of inhibiting AGE (Advanced Glycation End products) in a mammal which comprises administering an effective amount of a compound of Formula (I)



(I)

5 or its pharmaceutically acceptable salts in association with a pharmaceutically acceptable carrier, diluent, excipient or solvent,

wherein

R<sub>1</sub> is -R<sub>4</sub>-R<sub>5</sub> or -N(R<sub>7</sub>) N (R<sub>7</sub>) R<sub>9</sub> and Y-R<sub>11</sub>;

10 R<sub>4</sub> is selected from the group consisting of -N(R<sub>7</sub>)R<sub>6</sub>O-,

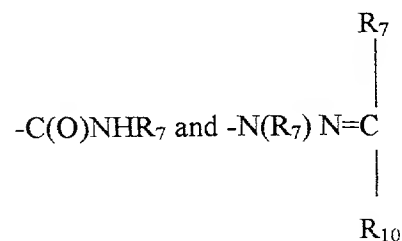
-N(R<sub>7</sub>)R<sub>6</sub>N(R<sub>7</sub>),

-OR<sub>6</sub>O, and -OR<sub>6</sub>N(R<sub>7</sub>)-,

where R<sub>6</sub> is alkyl;

R<sub>5</sub> is selected from the group consisting of alkyl, aryl including heteroaryl, -COR<sub>7</sub>, -

15 SO<sub>2</sub>R<sub>7</sub>, -C(S) NHR<sub>7</sub>, -C(NH)NHR<sub>7</sub>, -COR<sub>10</sub>,



20

where R<sub>7</sub> is selected from the group consisting of H, alkyl and aryl including heteroaryl,

25 provided R<sub>7</sub> may be the same or different for R<sub>1</sub> and R<sub>3</sub> in the same compound;

R<sub>2</sub> is selected from the group consisting of F, Cl, Br, I, OR<sub>7</sub>, NO<sub>2</sub>, alkyl, aryl including heteroaryl, formyl, acyl, C(O)NR<sub>7</sub>R<sub>10</sub>, C(O)OR<sub>7</sub>, NR<sub>7</sub>R<sub>10</sub>, N=C(R<sub>7</sub>)(R<sub>10</sub>), SR<sub>7</sub>, SO<sub>2</sub>NH<sub>2</sub>, SO<sub>2</sub> alkyl and SO<sub>2</sub>aryl;

30

m is 0, 1 or 2;

R<sub>3</sub> is selected from the group consisting of R<sub>7</sub>, OR<sub>7</sub>, N(R<sub>7</sub>) (R<sub>10</sub>), N=C(R<sub>7</sub>) (R<sub>10</sub>), N(R<sub>7</sub>) N(R<sub>7</sub>)

35

(R<sub>10</sub>), N(R<sub>7</sub>) N=C(R<sub>7</sub>) (R<sub>10</sub>) and CH(R<sub>7</sub>)C(O)R<sub>8</sub>

where R<sub>8</sub> is selected from the group consisting of R<sub>7</sub>, OR<sub>7</sub> and NR<sub>7</sub>R<sub>10</sub>;

R<sub>9</sub> is selected from the group consisting of hydrogen, alkyl, aryl including heteroaryl, C(O)R<sub>10</sub>, -SO<sub>2</sub>R<sub>10</sub>, C(S)NHR<sub>10</sub>, C(NH) NH (R<sub>10</sub>) and C(O) NHR<sub>10</sub>;

40

R<sub>10</sub> is selected from the group consisting of H, alkyl and aryl, including heteroaryl and in each case may be the same or different from substituent R<sub>7</sub>, provided R<sub>10</sub> may be the same or different for R<sub>1</sub> and R<sub>3</sub> in the same compound;

Y is selected from oxygen, NH, NR<sub>12</sub> and null

45

R<sub>11</sub> and R<sub>12</sub> are independently selected from hydrogen, alkyl and aryl

X is selected from group consisting of a halide ion, acetate ion, perchlorate ion, sulfonate ion, oxalate ion, citrate ion, tosylate ion, maleate ion, mesylate ion, carbonate ion, sulfite ion, phosphoric hydrogen ion, phosphonate ion, phosphate ion, BF<sub>4</sub><sup>-</sup> and PF<sub>6</sub><sup>-</sup>;

50

with proviso that,

(i) when two alkyl groups are present on the same carbon or nitrogen, they may be linked together to form a cyclic structure,

(ii) the nitrogen of heteroaryl ring of R<sub>10</sub>, when present, may be quaternized;

55

(iii) when R<sub>3</sub> is OR<sub>7</sub> and R<sub>1</sub> is -NHNH<sub>2</sub> then R<sub>7</sub> is not alkyl and

(iv) when R<sub>3</sub> is OR<sub>7</sub>, R<sub>1</sub> is N(R<sub>7</sub>)(NR<sub>7</sub>)R<sub>9</sub> and R<sub>9</sub> is C(O)R<sub>10</sub> where

R<sub>10</sub> is alkyl, then R<sub>7</sub> is not hydrogen.

84. The method as claimed in claim 83, wherein the said compound is selected from the group consisting of :

- (a) N,N'-bis[3-carbonyl-1-(2-thien -2'-yl -2-oxoethyl) -3-pyridinium] hydrazine dibromide or other pharmaceutially acceptable salts thereof,
- 5 (b) 1-(2-ethoxy -2-oxoethyl) -3-(2-(2-pyridyl)hydrazinocarbonyl) pyridinium bromide or other pharmaceutially acceptable salts thereof,
- (c) 1-(2-ethoxy -2-oxoethyl) -3-(2-(benzoyloxy) ethylamino carbonyl) pyridinium bromide or other pharmaceutially acceptable salts thereof,
- (d)N,N'-bis[3-carbonyl-1-(2-phenyl-2-oxoethyl)pyridinium]hydrazine dibromide or other
- 10 pharmaceutially acceptable salts thereof,
- (e)1-(2-phenyl-2-oxoethyl)-3-(hydrazinocarbonyl)pyridinium bromide or other pharmaceutially acceptable salts thereof,
- (f) 1-(2-thien -2'-yl -2-oxoethyl) -3-(methanesulfonyl hydrazinocarbonyl) pyridinium bromide or other pharmaceutially acceptable salts thereof,
- 15 (g) N,N'-bis[3-carbonyl-1-(2-(2',4'-dichlorophenyl)-2-oxoethyl) pyridinium] hydrazine dibromide or other pharmaceutially acceptable salts thereof,
- (h) 1-(2-phenyl -2-oxoethyl) -3-(methanesulfonyl hydrazinocarbonyl) pyridinium bromide or other pharmaceutially acceptable salts thereof,
- (i) 1-(2-ethoxy -2-oxoethyl) -3-(methanesulfonyl hydrazinocarbonyl) pyridinium bromide
- 20 or other pharmaceutially acceptable salts thereof,
- (j)1-(2-phenyl-2-oxoethyl)-3-(phenylsulfonylhydrazino carbonyl) pyridinium bromide or other pharmaceutially acceptable salts thereof,
- (k)1-(2-phenyl-2-oxoethyl)-2-chloro-3-(phenylsulfonyl hydrazino carbonyl) pyridinium bromide or other pharmaceutially acceptable salts thereof ,
- 25 (l) 1-(2-thien -2'-yl -2-oxoethyl)-4-(2-(benzoyloxy) ethyl aminocarbonyl) pyridinium bromide or other pharmaceutially acceptable salts thereof,
- (m)1- (2- (2',4'- dichlorophenyl) -2-oxoethyl) -3-(2- (benzoyloxy) ethylaminocarbonyl) pyridinium bromide or other pharmaceutially acceptable salts thereof,
- (n) 1-(2-phenyl -2-oxoethyl) -3-(2-(acetoxo) ethyloxy) carbonyl) pyridinium bromide or
- 30 other pharmaceutially acceptable salts thereof,

(o) 1-(2-ethoxy-2-oxoethyl)-3-(2-(benzoyloxy) ethyloxy carbonyl) pyridinium bromide or other pharmaceutially acceptable salts thereof,

(p) 1-(2-phenylamino-2-oxoethyl)-4-(phenylsulfonyl hydrazino carbonyl)pyridinium chloride or other pharmaceutially acceptable salts thereof,

35 (q) 1-(2-(2,4'-dichlorophenyl)-2-oxoethyl)-3-(2(methoxy) ethyloxycarbonyl) pyridinium bromide or other pharmaceutially acceptable salts thereof,

(r) 1-(2-phenylamino-2-oxoethyl)-3-((benzoyloxy) ethylaminocarbonyl) pyridinium chloride or other pharmaceutially acceptable salts thereof,

(s) 1-(2-thien-2'-yl-2-oxoethyl)-3-(phenylaminocarbonyl hydrazinocarbonyl) pyridinium  
40 bromide or other pharmaceutially acceptable salts thereof,

(t) 1-(2-phenyl-2-oxoethyl)-3-(2-(acetoxo) ethylaminocarbonyl) pyridinium bromide or other pharmaceutially acceptable salts thereof,

(u) 1-(2-phenylamino-2-oxoethyl)-3-(phenyl sulfonyl hydrazino carbonyl) pyridinium chloride or other pharmaceutially acceptable salts thereof,

45 (v) 1-(2-phenylamino-2-oxoethyl)-3-((4-methylphenyl)sulfonyl hydrazinocarbonyl) pyridinium chloride or other pharmaceutially acceptable salts thereof,

(w) 1-(2-phenyl-2-oxoethyl)-3-(2-(benzoyloxy)ethyloxy carbonyl) pyridinium bromide or other pharmaceutially acceptable salts thereof,

(x) 1-(2-thien-2'-yl-2-oxoethyl)-3-(phenylcarbonyl hydrazino carbonyl)  
50 pyridinium bromide or other pharmaceutially acceptable salts thereof,

(y) 1-(2-ethoxy-2-oxoethyl)-3-((phenylmethyl)sulfonyl hydrazino carbonyl)pyridinium bromide or other pharmaceutially acceptable salts thereof,

(z) 1-(2-phenyl-2-oxoethyl)-3-((phenylmethyl)sulfonyl hydrazino carbonyl)pyridinium bromide or other pharmaceutially acceptable salts thereof,

55 (aa) N, N' - bis [3-carbonyl-1-(2-furan-2'-yl-2-oxoethyl) pyridinium] hydrazine dibromide or other pharmaceutially acceptable salts thereof,

(ab) N,N'-bis [3-carbonyl -1- (2-thien-2'-yl-2-oxoethyl) pyridinium] hydrazine dichloride or other pharmaceutially acceptable salts thereof,

(ac) N,N'-bis-[3-carbonyl-1-(2-cyclopropylamino-2-oxoethyl) pyridinium] hydrazine  
60 dichloride or other pharmaceutially acceptable salts thereof,

(ad) 1-(2,4'-dichlorophenyl-2-oxoethyl)-3-(2-methoxyethyl aminocarbonyl)-pyridinium

bromide or other pharmaceutially acceptable salts thereof,

(ae) 1-(2-thien-2'-yl-2-oxoethyl)-3-((2-methoxy ethyl) amino carbonyl)-5-bromo pyridinium chloride or other pharmaceutially acceptable salts thereof,

65 (af) 1-(2-thien-2'-yl-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl) pyridinium chloride or other pharmaceutially acceptable salts thereof,

(ag) 1-(2-thien-2'-yl-2-oxoethyl)-3-(2-(2-chloro-3-pyridoylhydrazinocarbonyl) - pyridinium chloride or other pharmaceutially acceptable salts thereof,

(ah) 1-(2-cyclopropylamino-2-oxoethyl)-3-(2-methoxyethylaminocarbonyl)

70 -pyridinium chloride or other pharmaceutially acceptable salts thereof,

(ai) 1-(2-isopropylamino-2-oxoethyl)-3-(2-methylsulfonylhydrazinocarbonyl)- pyridinium chloride or other pharmaceutially acceptable salts thereof,

(aj) 1-(2-phenylamino-2-oxo ethyl)-3-({2-(1-oxo-3-cyclohexyl)-ethyl} - hydrazinocarbonyl)-pyridinium bromide or other pharmaceutially acceptable salts

75 thereof,

(ak) 1-(2-thien-2'-yl-2-oxoethyl)-3-[2-(benzoyloxy)ethylamino carbonyl]-pyridinium bromide or other pharmaceutially acceptable salts thereof,

(al) 1-(4-ethoxy-2, 4-dioxobutyl)-3-(2-(benzoxoyloxy)ethylamino carbonyl)-pyridinium chloride or other pharmaceutially acceptable salts thereof,

80 (am)1-(2-thien-2'-yl-2-oxoethyl)-3-[1-oxo-1-(2-methoxy carbonyl) pyridyl] hydrazino pyridinium chloride or other pharmaceutially acceptable salts thereof,

(an)1-[1-(2-thien-2'-yl-2-oxoethyl)-5-aminocarbonyl-3-carbonyl pyridinium]-2-[1-(2-thien-2'-yl-2-oxoethyl )-3-carbonyl pyridinium] hydrazine dichloride or other pharmaceutially acceptable salts thereof,

85 (ao)1-(2-thien-2'-yl-2-oxoethyl)-3-(trifluoromethanesulfonyl hydrazino carbonyl) - pyridinium bromide or other pharmaceutially acceptable salts thereof,

(ap)1-[1-(2-thien-2'-yl-2-oxoethyl)-6-methyl-3-carbonyl pyridinium]-2-[1-(2-thien-2'-yl-2-oxoethyl )-3-carbonyl pyridinium ] hydrazine dichloride or other pharmaceutially acceptable salts thereof,

90 (aq) N,N'-bis[3-carbonyl-1-(2-(5-methyl-thien-2-yl)-2-oxoethyl) pyridinium] hydrazine dichloride or other pharmaceutially acceptable salts thereof,

(ar) N,N'-bis[3-carbonyl-1-(2-(5-chloro-thien-2-yl)-2-oxoethyl) pyridinium] hydrazine

dichloride or other pharmaceutially acceptable salts thereof,

(as) 1-(2-thien-2'-yl-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl)-6-methyl

95 pyridinium bromide or other pharmaceutially acceptable salts thereof,

(at) N,N'-bis[3-carbonyl-1-(2-(4-nitro-thien-2-yl)-2-oxoethyl)pyridinium] hydrazine

dichloride or other pharmaceutially acceptable salts thereof,

(au) 1-(2-phenylamino-2-oxoethyl)-3-(phenyl hydrazino carbonyl) pyridinium chloride or

other pharmaceutially acceptable salts thereof,

100 (av) 1-(2-(4-nitro-thien-2-yl)-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl )

pyridinium bromide or other pharmaceutially acceptable salts thereof,

(aw) 1-(2-(5-nitro-thien-2-yl)-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl)

pyridinium chloride or other pharmaceutially acceptable salts thereof,

(ax) 1-(2-(5-chloro-thien-2-yl)-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl)

105 pyridinium bromide or other pharmaceutially acceptable salts thereof,

(ay) 1-(2-thien-2'-yl-2-oxoethyl)-3-(ethoxycarbonyl hydrazino carbonyl) pyridinium

bromide or other pharmaceutially acceptable salts thereof,

(az) 1-(2-thien-2'-yl-2-oxoethyl)-3-(isopropylsulfonyl hydrazino carbonyl) pyridinium

bromide or other pharmaceutially acceptable salts thereof,

110 (ba) 1-(2-thien-2'-yl-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl)

-5-bromo pyridinium bromide or other pharmaceutially acceptable salts thereof,

(bb) 1-(2-(2-ethoxy carbonyl pyrrolidin-1-yl)-2-oxoethyl)-3-(methanesulfonyl hydrazino

carbonyl) pyridinium chloride or other pharmaceutially acceptable salts thereof,

(bc) 1-(2-(5-methyl-thien-2-yl)-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl)

115 pyridinium chloride or other pharmaceutially acceptable salts thereof,

(bd) 1-(2-(4- carboethoxy -thiazolidin-3-yl)-2-oxoethyl) -3-(methanesulfonyl hydrazino

carbonyl ) pyridinium chloride or other pharmaceutially acceptable salts thereof,

(be) 1-(2-(4-benzyl piperidin-1-yl)-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl)

pyridinium chloride or other pharmaceutically acceptable salts thereof,

120 (bf) N,N(-bis[3-carbonyl-1-(2-(2-ethoxycarbonyl pyrrolidin-1-yl)-2-oxoethyl)

pyridinium] hydrazine dichloride or other pharmaceutically acceptable salts thereof,

(bg) 1-(2-phenylamino-2-oxoethyl)-4 -[ 2-(benzoyloxy) ethylamino carbonyl ]

pyridinium chloride or other pharmaceutically acceptable salts thereof,

- (bh) 1-(2-thien-2(-yl-2-oxoethyl)-3-(phenyl hydrazino carbonyl) pyridinium bromide or  
125 other pharmaceutically acceptable salts thereof,
- (bi) 1-(2-thien-2(-yl-2-oxoethyl)-3-(p-methoxy phenyl sulfonyl hydrazino carbonyl)  
pyridinium bromide or other pharmaceutically acceptable salts thereof,
- (bj) 1-(2-ethoxy-2-oxoethyl)-3-(phenyl aminocarbonyl hydrazino carbonyl ) pyridinium  
bromide or other pharmaceutically acceptable salts thereof,
- 130 (bk) 1-(2-ethoxy-2-oxoethyl)-3-(p-toluene sulfonyl hydrazino carbonyl) pyridinium  
bromide or other pharmaceutically acceptable salts thereof,
- (bl) 1-(2-phenyl-2-oxoethyl)-3-(phenylamino carbonyl hydrazino carbonyl ) pyridinium  
bromide or other pharmaceutically acceptable salts thereof,
- (bm) 1-(2-phenylamino-2-oxoethyl)-3-(benzyl sulfonyl hydrazino carbonyl)  
135 pyridiniumchloride or other pharmaceutically acceptable salts thereof,
- (bn) 1-(2-phenyl-2-oxoethyl)-4-(methanesulfonyl hydrazino carbonyl ) pyridinium  
bromide or other pharmaceutically acceptable salts thereof,
- (bo) 1-(2-phenyl-2-oxoethyl)-3-(phenyl hydrazino carbonyl ) pyridinium bromide or  
other pharmaceutically acceptable salts thereof,
- 140 (bp) 1 -(2-ethoxy-2-oxoethyl)-4-[2-(benzoyloxy) ethyl amino carbonyl ] pyridinium  
bromide or other pharmaceutically acceptable salts thereof,
- (bq) 1-(2-ethoxy-2-oxoethyl)-3-(phenyl hydrazino carbonyl ) pyridinium bromide or  
other pharmaceutically acceptable salts thereof,
- (br) 1-(2-phenyl-2-oxoethyl)-3-(p-methoxyphenyl sulfonyl hydrazino carbonyl )  
145 pyridinium bromide or other pharmaceutically acceptable salts thereof,
- (bs) 1-(2-phenyl-2-oxoethyl)- 4-[2-(benzoyloxy) ethyl amino carbonyl] pyridinium  
bromide or other pharmaceutically acceptable salts thereof,
- (bt) 1-(2-ethoxy-2-oxoethyl)- 4-(p-methanesulfonyl hydrazino carbonyl ) pyridinium  
bromide or other pharmaceutically acceptable salts thereof,
- 150 (bu) 3-carbonylamino-1- (2-(2, 4-dichlorophenyl)-2-oxoethyl)-pyridinium bromide or  
other pharmaceutically acceptable salts thereof,
- (bv) 3-(tetrahydrobenzothiazol-2-yl) aminocarbonyl -1-(2-(2, 4-dichlorophenyl)-2-  
oxoethyl)-pyridinium bromide or other pharmaceutically acceptable salts thereof,
- (bw) 1-(2-phenyl-2-oxoethyl)-3-((2-hydroxyethyl) aminocarbonyl) pyridinium bromide



- 155 or other pharmaceutically acceptable salts thereof,  
 (bx) 3-carbonylamino-1-(2-thien-2'-yl-2-oxoethyl)-pyridinium bromide or other pharmaceutically acceptable salts thereof,  
 (by) 1-(2-phenyl-2-oxoethyl)-3-((p-sulfonamidophenylene) aminocarbonyl) pyridinium bromide or other pharmaceutically acceptable salts thereof,  
 160 (bz) 1-(2-ethoxy-2-oxoethyl)-3-((2-hydroxyethyl) aminocarbonyl) pyridinium bromide or other pharmaceutically acceptable salts thereof,  
 (ca) 1-(2-phenyl-2-oxoethyl)-3-(isopropylloxycarbonyl) pyridinium bromide or other pharmaceutically acceptable salts thereof,  
 (cb) 1-(2-oxopropyl)-3-((2-hydroxyethyl) aminocarbonyl) pyridinium chloride or other  
 165 pharmaceutically acceptable salts thereof,  
 (cc) 1-(2-thien-2'-yl-2-oxoethyl)-3-((2-hydroxyethyl) aminocarbonyl) pyridinium bromide or other pharmaceutically acceptable salts thereof,  
 (cd) 1-(2-(2,4 - dichlorophenyl-2-oxoethyl) -3- (isopropylloxycarbonyl) pyridinium bromide or other pharmaceutically acceptable salts thereof,  
 170 (ce) 1- (2-phenyl - 2- oxoethyl) - 3- ((4-methylthiazol - 2 -yl) aminocarbonyl) pyridinium bromide or other pharmaceutically acceptable salts thereof,  
 (cf) 1-(2- phenylamino -2- oxoethyl ) -3- (n-butyloxycarbonyl) pyridinium chloride or other pharmaceutically acceptable salts thereof,  
 (cg) 1- (2- phenylamino - 2- oxoethyl)- 3- ((2-hydroxyethyl) aminocarbonyl) -  
 175 pyridinium chloride or other pharmaceutically acceptable salts thereof,  
 (ch) 1- (2- (2,4 - dichlorophenyl ) - 2-oxoethyl) - 3- (n - butoxycarbonyl) pyridinium bromide or other pharmaceutically acceptable salts thereof,  
 (ci) 1-(2 - (2, 4 - dichlorophenyl) - 2-oxoethyl) - 3- (n-butylamino-carbonyl) pyridinium bromide or other pharmaceutically acceptable salts thereof,  
 180 (cj) 1-(2-phenyl-2-oxoethyl)-3-(1-phenyl-1-oxomethyl) pyridinium bromide or other pharmaceutically acceptable salts thereof and  
 (ck) 1- (2 phenyl - 2-oxoethyl) - 3- (methoxycarbonyl) pyridinium bromide or other pharmaceutically acceptable salts thereof.

85. A pharmaceutical composition for inhibiting of AGE in a mammal comprising the compounds as defined in claim 83 in association with pharmaceutically acceptable carrier, diluent, excipient or solvent.

86. The composition as claimed in claim 85, wherein the said compound is selected from the group comprising of:

(a) N,N'-bis[3-carbonyl-1-(2-thien-2'-yl-2-oxoethyl)-3-pyridinium] hydrazine dibromide or other pharmaceutially acceptable salts thereof,

5 (b) 1-(2-ethoxy-2-oxoethyl)-3-(2-(2-pyridyl)hydrazinocarbonyl) pyridinium bromide or other pharmaceutially acceptable salts thereof,

(c) 1-(2-ethoxy-2-oxoethyl)-3-(2-(benzoyloxy) ethylamino carbonyl) pyridinium bromide or other pharmaceutially acceptable salts thereof,

10 (d) N,N'-bis[3-carbonyl-1-(2-phenyl-2-oxoethyl)pyridinium]hydrazine dibromide or other pharmaceutially acceptable salts thereof,

(e) 1-(2-phenyl-2-oxoethyl)-3-(hydrazinocarbonyl)pyridinium bromide or other pharmaceutially acceptable salts thereof,

(f) 1-(2-thien-2'-yl-2-oxoethyl)-3-(methanesulfonyl hydrazinocarbonyl) pyridinium bromide or other pharmaceutially acceptable salts thereof,

15 (g) N,N'-bis[3-carbonyl-1-(2-(2',4'-dichlorophenyl)-2-oxoethyl) pyridinium] hydrazine dibromide or other pharmaceutially acceptable salts thereof,

(h) 1-(2-phenyl-2-oxoethyl)-3-(methanesulfonyl hydrazinocarbonyl) pyridinium bromide or other pharmaceutially acceptable salts thereof,

20 (i) 1-(2-ethoxy-2-oxoethyl)-3-(methanesulfonyl hydrazinocarbonyl) pyridinium bromide or other pharmaceutially acceptable salts thereof,

(j) 1-(2-phenyl-2-oxoethyl)-3-(phenylsulfonylhydrazino carbonyl) pyridinium bromide or other pharmaceutially acceptable salts thereof,

(k) 1-(2-phenyl-2-oxoethyl)-2-chloro-3-(phenylsulfonyl hydrazino carbonyl) pyridinium bromide or other pharmaceutially acceptable salts thereof,

25 (l) 1-(2-thien-2'-yl-2-oxoethyl)-4-(2-(benzoyloxy) ethyl aminocarbonyl) pyridinium bromide or other pharmaceutially acceptable salts thereof,

(m) 1-(2-(2',4'-dichlorophenyl)-2-oxoethyl)-3-(2-(benzoyloxy) ethylaminocarbonyl)

- pyridinium bromide or other pharmaceutially acceptable salts thereof,
- 30 (n) 1-(2-phenyl -2-oxoethyl) -3-(2-(acetoxo) ethyloxy) carbonyl) pyridinium bromide or other pharmaceutially acceptable salts thereof,
- (o) 1-(2-ethoxy -2-oxoethyl) -3-(2-(benzoyloxy) ethyloxy carbonyl) pyridinium bromide or other pharmaceutially acceptable salts thereof,
- (p) 1-(2-phenylamino-2-oxoethyl)-4-(phenylsulfonyl hydrazino carbonyl)pyridinium chloride or other pharmaceutially acceptable salts thereof,
- 35 (q) 1-(2-(2,4'-dichlorophenyl)-2-oxoethyl)-3- (2(methoxy) ethyloxycarbonyl) pyridinium bromide or other pharmaceutially acceptable salts thereof,
- (r) 1-(2-phenylamino-2-oxoethyl)-3-((benzoyloxy) ethylaminocarbonyl) pyridinium chloride or other pharmaceutially acceptable salts thereof,
- (s) 1-(2-thien-2'-yl-2-oxoethyl)-3-(phenylaminocarbonyl hydrazinocarbonyl) pyridinium 40 bromide or other pharmaceutially acceptable salts thereof,
- (t) 1-(2-phenyl-2-oxoethyl)-3-(2-(acetoxo) ethylaminocarbonyl) pyridinium bromide or other pharmaceutially acceptable salts thereof,
- (u) 1-(2-phenylamino-2-oxoethyl)-3-(phenyl sulfonyl hydrazino carbonyl) pyridinium chloride or other pharmaceutially acceptable salts thereof,
- 45 (v) 1-(2-phenylamino-2-oxoethyl)-3-((4-methylphenyl)sulfonyl hydrazinocarbonyl) pyridinium chloride or other pharmaceutially acceptable salts thereof,
- (w) 1-(2-phenyl-2-oxoethyl)-3-(2-(benzoyloxy)ethyloxy carbonyl) pyridinium bromide or other pharmaceutially acceptable salts thereof,
- (x) 1-(2-thien-2'-yl-2-oxoethyl)-3-(phenylcarbonyl hydrazino carbonyl) 50 pyridinium bromide or other pharmaceutially acceptable salts thereof,
- (y) 1-(2-ethoxy-2-oxoethyl)-3-((phenylmethyl)sulfonyl hydrazino carbonyl)pyridinium bromide or other pharmaceutially acceptable salts thereof,
- (z)1-(2-phenyl-2-oxoethyl)-3-((phenylmethyl)sulfonyl hydrazino carbonyl)pyridinium bromide or other pharmaceutially acceptable salts thereof,
- 55 (aa) N, N' - bis [3-carbonyl-1-(2-furan-2'-yl-2-oxoethyl) pyridinium] hydrazine dibromide or other pharmaceutially acceptable salts thereof,
- (ab) N,N'-bis [3-carbonyl -1- (2-thien-2'-yl-2-oxoethyl) pyridinium] hydrazine dichloride or other pharmaceutially acceptable salts thereof,

- (ac) N,N'-bis-[3-carbonyl-1-(2-cyclopropylamino-2-oxoethyl) pyridinium] hydrazine  
 60 dichloride or other pharmaceutially acceptable salts thereof,  
 (ad) 1-(2',4'-dichlorophenyl-2-oxoethyl)-3-(2-methoxyethyl aminocarbonyl)-pyridinium  
 bromide or other pharmaceutially acceptable salts thereof,  
 (ae) 1-(2-thien-2'-yl-2-oxoethyl)-3-((2-methoxy ethyl) amino carbonyl)-5-bromo  
 pyridinium chloride or other pharmaceutially acceptable salts thereof,  
 65 (af) 1-(2-thien-2'-yl-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl) pyridinium  
 chloride or other pharmaceutially acceptable salts thereof,  
 (ag) 1-(2-thien-2'-yl-2-oxoethyl)-3-(2-(2-chloro-3-pyridoylhydrazinocarbonyl) -  
 pyridinium chloride or other pharmaceutially acceptable salts thereof,  
 (ah) 1-(2-cyclopropylamino-2-oxoethyl)-3-(2-methoxyethylaminocarbonyl)  
 70 -pyridinium chloride or other pharmaceutially acceptable salts thereof,  
 (ai) 1-(2-isopropylamino-2-oxoethyl)-3-(2-methylsulfonylhydrazinocarbonyl)-  
 pyridinium chloride or other pharmaceutially acceptable salts thereof,  
 (aj) 1-(2-phenylamino-2-oxo ethyl)-3-({2-(1-oxo-3-cyclohexyl)-ethyl} -  
 hydrazinocarbonyl)-pyridinium bromide or other pharmaceutially acceptable salts  
 75 thereof,  
 (ak) 1-(2-thien-2'-yl-2-oxoethyl)-3-[2-(benzoyloxy)ethylamino carbonyl]-pyridinium  
 bromide or other pharmaceutially acceptable salts thereof,  
 (al) 1-(4-ethoxy-2, 4-dioxobutyl)-3-(2-(benzoxyl oxy)ethylamino carbonyl)-pyridinium  
 chloride or other pharmaceutially acceptable salts thereof,  
 80 (am)1-(2-thien-2'-yl-2-oxoethyl)-3-[1-oxo-1-(2-methoxy carbonyl) pyridyl] hydrazino  
 pyridinium chloride or other pharmaceutially acceptable salts thereof,  
 (an)1-[1-(2-thien-2'-yl-2-oxoethyl)-5-aminocarbonyl-3-carbonyl pyridinium]-2-[1-(2-  
 thien-2'-yl-2-oxoethyl )-3-carbonyl pyridinium] hydrazine dichloride or other  
 pharmaceutially acceptable salts thereof,  
 85 (ao)1-(2-thien-2'-yl-2-oxoethyl)-3-(trifluoromethanesulfonyl hydrazino carbonyl) -  
 pyridinium bromide or other pharmaceutially acceptable salts thereof,  
 (ap)1-[1-(2-thien-2'-yl-2-oxoethyl)-6-methyl-3-carbonyl pyridinium]-2-  
 [1-(2-thien-2'-yl-2-oxoethyl )-3-carbonyl pyridinium ] hydrazine dichloride or other  
 pharmaceutially acceptable salts thereof,

- 90 (aq) N,N'-bis[3-carbonyl-1-(2-(5-methyl-thien-2-yl)-2-oxoethyl) pyridinium] hydrazine dichloride or other pharmaceutially acceptable salts thereof,
- (ar) N,N'-bis[3-carbonyl-1-(2-(5-chloro-thien-2-yl)-2-oxoethyl) pyridinium] hydrazine dichloride or other pharmaceutially acceptable salts thereof,
- (as) 1-(2-thien-2'-yl-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl )-6-methyl
- 95 pyridinium bromide or other pharmaceutially acceptable salts thereof,
- (at) N,N'-bis[3-carbonyl-1-(2-(4-nitro-thien-2-yl)-2-oxoethyl)pyridinium] hydrazine dichloride or other pharmaceutially acceptable salts thereof,
- (au) 1-(2-phenylamino-2-oxoethyl)-3-(phenyl hydrazino carbonyl) pyridinium chloride or other pharmaceutially acceptable salts thereof,
- 100 (av) 1-(2-(4-nitro-thien-2-yl)-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl ) pyridinium bromide or other pharmaceutially acceptable salts thereof,
- (aw) 1-(2-(5-nitro-thien-2-yl)-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl) pyridinium chloride or other pharmaceutially acceptable salts thereof,
- (ax) 1-(2-(5-chloro-thien-2-yl)-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl)
- 105 pyridinium bromide or other pharmaceutially acceptable salts thereof,
- (ay) 1-(2-thien-2'-yl-2-oxoethyl)-3-(ethoxycarbonyl hydrazino carbonyl) pyridinium bromide or other pharmaceutially acceptable salts thereof,
- (az) 1-(2-thien-2'-yl-2-oxoethyl)-3-(isopropylsulfonyl hydrazino carbonyl) pyridinium bromide or other pharmaceutially acceptable salts thereof,
- 110 (ba) 1-(2-thien-2'-yl-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl) -5-bromo pyridinium bromide or other pharmaceutially acceptable salts thereof,
- (bb) 1-(2-(2-ethoxy carbonyl pyrrolidin-1-yl)-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl) pyridinium chloride or other pharmaceutially acceptable salts thereof,
- (bc) 1-(2-(5-methyl-thien-2-yl)-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl)
- 115 pyridinium chloride or other pharmaceutially acceptable salts thereof,
- (bd) 1-(2-(4- carboethoxy -thiazolidin-3-yl)-2-oxoethyl) -3-(methanesulfonyl hydrazino carbonyl ) pyridinium chloride or other pharmaceutially acceptable salts thereof,
- (be) 1-(2-(4-benzyl piperidin-1-yl)-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl) pyridinium chloride or other pharmaceutially acceptable salts thereof,
- 120 (bf) N,N(-bis[3-carbonyl-1-(2-(2-ethoxycarbonyl pyrrolidin-1-yl)-2-oxoethyl)

- pyridinium] hydrazine dichloride or other pharmaceutically acceptable salts thereof,
- (bg) 1-(2-phenylamino-2-oxoethyl)-4-[2-(benzoyloxy) ethylamino carbonyl ]  
pyridinium chloride or other pharmaceutically acceptable salts thereof,
- (bh) 1-(2-thien-2(-yl-2-oxoethyl)-3-(phenyl hydrazino carbonyl) pyridinium bromide or  
125 other pharmaceutically acceptable salts thereof,
- (bi) 1-(2-thien-2(-yl-2-oxoethyl)-3-(p-methoxy phenyl sulfonyl hydrazino carbonyl)  
pyridinium bromide or other pharmaceutically acceptable salts thereof,
- (bj) 1-(2-ethoxy-2-oxoethyl)-3-(phenyl aminocarbonyl hydrazino carbonyl ) pyridinium  
bromide or other pharmaceutically acceptable salts thereof,
- (bk) 1-(2-ethoxy-2-oxoethyl)-3-(p-toluene sulfonyl hydrazino carbonyl) pyridinium  
130 bromide or other pharmaceutically acceptable salts thereof,
- (bl) 1-(2-phenyl-2-oxoethyl)-3-(phenylamino carbonyl hydrazino carbonyl ) pyridinium  
bromide or other pharmaceutically acceptable salts thereof,
- (bm) 1-(2-phenylamino-2-oxoethyl)-3-(benzyl sulfonyl hydrazino carbonyl)  
135 pyridiniumchloride or other pharmaceutically acceptable salts thereof,
- (bn) 1-(2-phenyl-2-oxoethyl)-4-(methanesulfonyl hydrazino carbonyl ) pyridinium  
bromide or other pharmaceutically acceptable salts thereof,
- (bo) 1-(2-phenyl-2-oxoethyl)-3-(phenyl hydrazino carbonyl ) pyridinium bromide or  
other pharmaceutically acceptable salts thereof,
- (bp) 1 -(2-ethoxy-2-oxoethyl)-4-[2-(benzoyloxy) ethyl amino carbonyl ] pyridinium  
140 bromide or other pharmaceutically acceptable salts thereof,
- (bq) 1-(2-ethoxy-2-oxoethyl)-3-(phenyl hydrazino carbonyl ) pyridinium bromide or  
other pharmaceutically acceptable salts thereof,
- (br) 1-(2-phenyl-2-oxoethyl)-3-(p-methoxyphenyl sulfonyl hydrazino carbonyl )  
145 pyridinium bromide or other pharmaceutically acceptable salts thereof,
- (bs) 1-(2-phenyl-2-oxoethyl)- 4-[2-(benzoyloxy) ethyl amino carbonyl] pyridinium  
bromide or other pharmaceutically acceptable salts thereof,
- (bt) 1-(2-ethoxy-2-oxoethyl)- 4-(p-methanesulfonyl hydrazino carbonyl ) pyridinium  
bromide or other pharmaceutically acceptable salts thereof,
- (bu) 3-carbonylamino-1- (2-(2, 4-dichlorophenyl)-2-oxoethyl)-pyridinium bromide or  
150 other pharmaceutically acceptable salts thereof,

- (bv) 3-(tetrahydrobenzothiazol-2-yl) aminocarbonyl -1-(2-(2, 4-dichlorophenyl)-2-oxoethyl)-pyridinium bromide or other pharmaceutically acceptable salts thereof,
- (bw) 1-(2-phenyl-2-oxoethyl)-3-((2-hydroxyethyl) aminocarbonyl) pyridinium bromide  
 155 or other pharmaceutically acceptable salts thereof,
- (bx) 3-carbonylamino-1- (2-thien-2'-yl-2-oxoethyl)-pyridinium bromide or other pharmaceutically acceptable salts thereof,
- (by) 1-(2-phenyl -2-oxoethyl)-3-((p-sulfonamidophenylene) aminocarbonyl) pyridinium bromide or other pharmaceutically acceptable salts thereof,
- 160 (bz) 1-(2-ethoxy-2-oxoethyl)-3-((2-hydroxyethyl) aminocarbonyl) pyridinium bromide or other pharmaceutically acceptable salts thereof,
- (ca) 1-(2-phenyl-2-oxoethyl)-3-(isopropylloxycarbonyl) pyridinium bromide or other pharmaceutically acceptable salts thereof,
- (cb) 1-(2-oxopropyl)-3-((2-hydroxyethyl) aminocarbonyl) pyridinium chloride or other  
 165 pharmaceutically acceptable salts thereof,
- (cc) 1-(2-thien-2'-yl-2-oxoethyl)-3-((2-hydroxyethyl) aminocarbonyl) pyridinium bromide or other pharmaceutically acceptable salts thereof,
- (cd) 1-(2-(2,4 - dichlorophenyl-2-oxoethyl) -3- (isopropylloxycarbonyl) pyridinium bromide or other pharmaceutically acceptable salts thereof,
- 170 (ce) 1- (2-phenyl - 2- oxoethyl) - 3- ((4-methylthiazol - 2 -yl) aminocarbonyl) pyridinium bromide or other pharmaceutically acceptable salts thereof,
- (cf) 1-(2- phenylamino -2- oxoethyl ) -3- (n-butyloxycarbonyl) pyridinium chloride or other pharmaceutically acceptable salts thereof,
- (cg) 1- (2- phenylamino - 2- oxoethyl)- 3- ((2-hydroxyethyl) aminocarbonyl) -  
 175 pyridinium chloride or other pharmaceutically acceptable salts thereof,
- (ch) 1- (2- (2,4 - dichlorophenyl ) - 2-oxoethyl) - 3- (n - butoxycarbonyl) pyridinium bromide or other pharmaceutically acceptable salts thereof,
- (ci) 1-(2 - (2, 4 - dichlorophenyl) - 2-oxoethyl) - 3- (n-butylamino-carbonyl) pyridinium bromide or other pharmaceutically acceptable salts thereof,
- 180 (cj) 1-(2-phenyl-2-oxoethyl)-3-(1-phenyl-1-oxomethyl) pyridinium bromide or other pharmaceutically acceptable salts thereof and
- (ck) 1- (2 phenyl - 2-oxoethyl) - 3- (methoxycarbonyl) pyridinium bromide or other

pharmaceutically acceptable salts thereof.

87. A method of inhibiting diseases caused by onset of AGE (Advanced Glycation End products) in a mammal which comprises administering an effective amount of a compound as defined in claim 83 or its pharmaceutically acceptable salts in association with a pharmaceutically acceptable carrier, diluent, excipient  
5 or solvent.

88. The method as claimed in claim 87 wherein the diseases which are inhibited are selected from at least one of the following group:

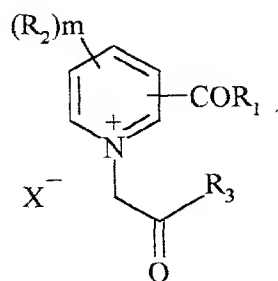
- a. vascular and neuro-vascular complications,
- b. nephrological disorder,
- 5 c. neurological disorder,
- d. atherosclerosis,
- e. retinal disorder,
- f. dermatological disorder,
- g. non-enzymatic browning of oral cavity,
- 10 h. endothelial or other organ dysfunction ,
- i. growth impairment,
- j. inflammatory disorder,
- k. immunological disorder,
- l. oxidative stress,
- 15 m. aging and diabetic complication,
- n. alzheimer disease,
- o. restenosis and
- p. erectile dysfunction

89. A method of treating a mammal for conditions requiring simultaneous action of an AGE-breaker, AGE-inhibitor and a free radical scavenger which comprise administering an effective amount of a compound of formula (I) or its pharmaceutically acceptable salts,



5

10



(I)

in association with a pharmaceutically acceptable carrier, diluent, excipient or solvent.

15 wherein

$R_1$  is  $-R_4-R_5$  or  $-N(R_7)N(R_7)R_9$  and  $Y-R_{11}$ ;

$R_4$  is selected from the group consisting of  $-N(R_7)R_6O-$ ,

$-N(R_7)R_6N(R_7)$ ,

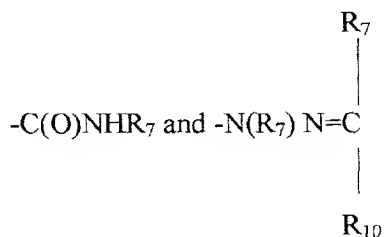
$-OR_6O$ , and  $-OR_6N(R_7)-$ ,

20 where  $R_6$  is alkyl;

$R_5$  is selected from the group consisting of alkyl, aryl including heteroaryl,  $-COR_7$ , -

$SO_2R_7$ ,  $-C(S)NHR_7$ ,  $-C(NH)NHR_7$ ,  $-COR_{10}$ ,

25



30 where  $R_7$  is selected from the group consisting of H, alkyl and aryl including heteroaryl, provided  $R_7$  may be the same or different for  $R_1$  and  $R_3$  in the same compound;

$R_2$  is selected from the group consisting of F, Cl, Br, I,  $OR_7$ ,  $NO_2$ , alkyl, aryl including heteroaryl, formyl, acyl,  $C(O)NR_7R_{10}$ ,  $C(O)OR_7$ ,  $NR_7R_{10}$ ,  $N=C(R_7)(R_{10})$ ,  $SR_7$ ,  $SO_2NH_2$ ,

35  $SO_2$  alkyl and  $SO_2$  aryl;

m is 0, 1 or 2;

$R_3$  is selected from the group consisting of  $R_7$ ,  $OR_7$ ,  $N(R_7)(R_{10})$ ,  $N=C(R_7)(R_{10})$ ,  $N(R_7)$

40  $N(R_7)(R_{10})$ ,  $N(R_7)N=C(R_7)(R_{10})$  and  $CH(R_7)C(O)R_8$

where  $R_8$  is selected from the group consisting of  $R_7$ ,  $OR_7$  and  $NR_7R_{10}$ ;

$R_9$  is selected from the group consisting of hydrogen, alkyl, aryl including heteroaryl,  $C(O)R_{10}$ ,  $-SO_2R_{10}$ ,  $C(S)NHR_{10}$ ,  $C(NH)NH(R_{10})$  and  $C(O)NHR_{10}$ ;

45  $R_{10}$  is selected from the group consisting of H, alkyl and aryl, including heteroaryl and in each case may be the same or different from substituent  $R_7$ , provided  $R_{10}$  may be the same or different for  $R_1$  and  $R_3$  in the same compound;

Y is selected from oxygen, NH,  $NR_{12}$  and null

$R_{11}$  and  $R_{12}$  are independently selected from hydrogen, alkyl and aryl

50

X is selected from group consisting of a halide ion, acetate ion, perchlorate ion, sulfonate ion, oxalate ion, citrate ion, tosylate ion, maleate ion, mesylate ion, carbonate ion, sulfite ion, phosphoric hydrogen ion, phosphonate ion, phosphate ion,  $BF_4^-$  and  $PF_6^-$ ;  
with proviso that,

55

(i) when two alkyl groups are present on the same carbon or nitrogen, they may be linked together to form a cyclic structure;

(ii) the nitrogen of heteroaryl ring of  $R_{10}$ , when present, may be quaternized;

(iii) when  $R_3$  is  $OR_7$  and  $R_1$  is  $-NHNH_2$  then  $R_7$  is not alkyl and

60 (iv) when  $R_3$  is  $OR_7$ ,  $R_1$  is  $N(R_7)(NR_7)R_9$  and  $R_9$  is  $C(O)R_{10}$  where  $R_{10}$  is alkyl, then  $R_7$  is not hydrogen,

90. The method as claimed in claim 89, wherein said compound is selected from the group consisting of.

(a)  $N,N'$ -bis[3-carbonyl-1-(2-thien-2'-yl)-2-oxoethyl]-3-pyridinium] hydrazine dibromide or other pharmaceutially acceptable salts thereof,

- 5 (b) 1-(2-ethoxy -2-oxoethyl) -3-(2-(2-pyridyl)hydrazinocarbonyl) pyridinium bromide or other pharmaceutially acceptable salts thereof,
- (c) 1-(2-ethoxy -2-oxoethyl) -3-(2-(benzoyloxy) ethylamino carbonyl) pyridinium bromide or other pharmaceutially acceptable salts thereof,
- (d) N,N'-bis[3-carbonyl-1-(2-phenyl-2-oxoethyl)pyridinium]hydrazine dibromide or other  
10 pharmaceutially acceptable salts thereof,
- (e) 1-(2-phenyl-2-oxoethyl)-3-(hydrazinocarbonyl)pyridinium bromide or other pharmaceutially acceptable salts thereof,
- (f) 1-(2-thien -2'-yl -2-oxoethyl) -3-(methanesulfonyl hydrazinocarbonyl) pyridinium bromide or other pharmaceutially acceptable salts thereof,
- 15 (g) N,N'-bis[3-carbonyl-1-(2-(2',4'-dichlorophenyl)-2-oxoethyl) pyridinium] hydrazine dibromide or other pharmaceutially acceptable salts thereof,
- (h) 1-(2-phenyl -2-oxoethyl) -3-(methanesulfonyl hydrazinocarbonyl) pyridinium bromide or other pharmaceutially acceptable salts thereof,
- (i) 1-(2-ethoxy -2-oxoethyl) -3-(methanesulfonyl hydrazinocarbonyl) pyridinium bromide  
20 or other pharmaceutially acceptable salts thereof,
- (j) 1-(2-phenyl-2-oxoethyl)-3-(phenylsulfonylhydrazino carbonyl) pyridinium bromide or other pharmaceutially acceptable salts thereof,
- (k) 1-(2-phenyl-2-oxoethyl)-2-chloro-3-(phenylsulfonyl hydrazino carbonyl) pyridinium bromide or other pharmaceutially acceptable salts thereof ,
- 25 (l) 1-(2-thien -2'-yl -2-oxoethyl)-4-(2-(benzoyloxy) ethyl aminocarbonyl) pyridinium bromide or other pharmaceutially acceptable salts thereof,
- (m) 1-(2-(2',4'- dichlorophenyl) -2-oxoethyl) -3-(2-(benzoyloxy) ethylaminocarbonyl) pyridinium bromide or other pharmaceutially acceptable salts thereof,
- (n) 1-(2-phenyl -2-oxoethyl) -3-(2-(acetoxo) ethyloxy) carbonyl) pyridinium bromide or  
30 other pharmaceutially acceptable salts thereof,
- (o) 1-(2-ethoxy -2-oxoethyl) -3-(2-(benzoyloxy) ethyloxy carbonyl) pyridinium bromide or other pharmaceutially acceptable salts thereof,
- (p) 1-(2-phenylamino-2-oxoethyl)-4-(phenylsulfonyl hydrazino carbonyl)pyridinium chloride or other pharmaceutially acceptable salts thereof,
- 35 (q) 1-(2-(2',4'-dichlorophenyl)-2-oxoethyl)-3- (2(methoxy) ethyloxycarbonyl)

- pyridinium bromide or other pharmaceutially acceptable salts thereof,
- (r) 1-(2-phenylamino-2-oxoethyl)-3-((benzoyloxy) ethylaminocarbonyl) pyridinium chloride or other pharmaceutially acceptable salts thereof,
- (s) 1-(2-thien-2'-yl-2-oxoethyl)-3-(phenylaminocarbonyl hydrazinocarbonyl) pyridinium  
 40 bromide or other pharmaceutially acceptable salts thereof,
- (t) 1-(2-phenyl-2-oxoethyl)-3-(2-(acetoxo) ethylaminocarbonyl) pyridinium bromide or other pharmaceutially acceptable salts thereof,
- (u) 1-(2-phenylamino-2-oxoethyl)-3-(phenyl sulfonyl hydrazino carbonyl) pyridinium chloride or other pharmaceutially acceptable salts thereof,
- (v) 1-(2-phenylamino-2-oxoethyl)-3-((4-methylphenyl)sulfonyl hydrazinocarbonyl)  
 45 pyridinium chloride or other pharmaceutially acceptable salts thereof,
- (w) 1-(2-phenyl-2-oxoethyl)-3-(2-(benzoyloxy)ethyloxy carbonyl) pyridinium bromide or other pharmaceutially acceptable salts thereof,
- (x) 1-(2-thien-2'-yl-2-oxoethyl)-3-(phenylcarbonyl hydrazino carbonyl)  
 50 pyridinium bromide or other pharmaceutially acceptable salts thereof,
- (y) 1-(2-ethoxy-2-oxoethyl)-3-((phenylmethyl)sulfonyl hydrazino carbonyl)pyridinium bromide or other pharmaceutially acceptable salts thereof,
- (z) 1-(2-phenyl-2-oxoethyl)-3-((phenylmethyl)sulfonyl hydrazino carbonyl)pyridinium bromide or other pharmaceutially acceptable salts thereof,
- (aa) N, N' - bis [3-carbonyl-1-(2-furan-2'-yl-2-oxoethyl) pyridinium] hydrazine  
 55 dibromide or other pharmaceutially acceptable salts thereof,
- (ab) N,N'-bis [3-carbonyl -1- (2-thien-2'-yl-2-oxoethyl) pyridinium] hydrazine dichloride or other pharmaceutially acceptable salts thereof,
- (ac) N,N'-bis-[3-carbonyl-1-(2-cyclopropylamino-2-oxoethyl) pyridinium] hydrazine  
 60 dichloride or other pharmaceutially acceptable salts thereof,
- (ad) 1-(2',4'-dichlorophenyl-2-oxoethyl)-3-(2-methoxyethyl aminocarbonyl)-pyridinium bromide or other pharmaceutially acceptable salts thereof,
- (ae) 1-(2-thien-2'-yl-2-oxoethyl)-3-((2-methoxy ethyl) amino carbonyl)-5-bromo  
 pyridinium chloride or other pharmaceutially acceptable salts thereof,
- (af) 1-(2-thien-2'-yl-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl) pyridinium  
 65 chloride or other pharmaceutially acceptable salts thereof,

- (ag) 1-(2-thien-2'-yl-2-oxoethyl)-3-(2-(2-chloro-3-pyridoylhydrazinocarbonyl) -  
pyridinium chloride or other pharmaceutially acceptable salts thereof,
- (ah) 1-(2-cyclopropylamino-2-oxoethyl)-3-(2-methoxyethylaminocarbonyl)  
70 -pyridinium chloride or other pharmaceutially acceptable salts thereof,
- (ai) 1-(2-isopropylamino-2-oxoethyl)-3-(2-methylsulfonylhydrazinocarbonyl)-  
pyridinium chloride or other pharmaceutially acceptable salts thereof,
- (aj) 1-(2-phenylamino-2-oxo ethyl)-3-( {2-(1-oxo-3-cyclohexyl)-ethyl} -  
hydrazinocarbonyl)-pyridinium bromide or other pharmaceutially acceptable salts  
75 thereof,
- (ak) 1-(2-thien-2'-yl-2-oxoethyl)-3-[2-(benzoyloxy)ethylamino carbonyl]-pyridinium  
bromide or other pharmaceutially acceptable salts thereof,
- (al) 1-(4-ethoxy-2, 4-dioxobutyl)-3-(2-(benzoyloxy)ethylamino carbonyl)-pyridinium  
chloride or other pharmaceutially acceptable salts thereof,
- 80 (am)1-(2-thien-2'-yl-2-oxoethyl)-3-[1-oxo-1-(2-methoxy carbonyl) pyridyl] hydrazino  
pyridinium chloride or other pharmaceutially acceptable salts thereof,
- (an)1-[1-(2-thien-2'-yl-2-oxoethyl)-5-aminocarbonyl-3-carbonyl pyridinium]-2-[1-(2-  
thien-2'-yl-2-oxoethyl )-3-carbonyl pyridinium] hydrazine dichloride or other  
pharmaceutially acceptable salts thereof,
- 85 (ao)1-(2-thien-2'-yl-2-oxoethyl)-3-(trifluoromethanesulfonyl hydrazino carbonyl) -  
pyridinium bromide or other pharmaceutially acceptable salts thereof,
- (ap)1-[1-(2-thien-2'-yl-2-oxoethyl)-6-methyl-3-carbonyl pyridinium]-2-  
[1-(2-thien-2'-yl-2-oxoethyl )-3-carbonyl pyridinium ] hydrazine dichloride or other  
pharmaceutially acceptable salts thereof,
- 90 (aq) N,N'-bis[3-carbonyl-1-(2-(5-methyl-thien-2-yl)-2-oxoethyl) pyridinium] hydrazine  
dichloride or other pharmaceutially acceptable salts thereof,
- (ar) N,N'-bis[3-carbonyl-1-(2-(5-chloro-thien-2-yl)-2-oxoethyl) pyridinium] hydrazine  
dichloride or other pharmaceutially acceptable salts thereof,
- (as) 1-(2-thien-2'-yl-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl )-6-methyl  
95 pyridinium bromide or other pharmaceutially acceptable salts thereof,
- (at) N,N'-bis[3-carbonyl-1-(2-(4-nitro-thien-2-yl)-2-oxoethyl)pyridinium] hydrazine  
dichloride or other pharmaceutially acceptable salts thereof,

- (au) 1-(2-phenylamino-2-oxoethyl)-3-(phenyl hydrazino carbonyl) pyridinium chloride or other pharmaceutially acceptable salts thereof,
- 100 (av) 1-(2-(4-nitro-thien-2-yl)-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl ) pyridinium bromide or other pharmaceutially acceptable salts thereof,
- (aw) 1-(2-(5-nitro-thien-2-yl)-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl) pyridinium chloride or other pharmaceutially acceptable salts thereof,
- (ax) 1-(2-(5-chloro-thien-2-yl)-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl)
- 105 pyridinium bromide or other pharmaceutially acceptable salts thereof,
- (ay) 1-(2-thien-2'-yl-2-oxoethyl)-3-(ethoxycarbonyl hydrazino carbonyl) pyridinium bromide or other pharmaceutially acceptable salts thereof,
- (az) 1-(2-thien-2'-yl-2-oxoethyl)-3-(isopropylsulfonyl hydrazino carbonyl) pyridinium bromide or other pharmaceutially acceptable salts thereof,
- 110 (ba) 1-(2-thien-2'-yl-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl) -5-bromo pyridinium bromide or other pharmaceutially acceptable salts thereof,
- (bb) 1-(2-(2-ethoxy carbonyl pyrrolidin-1-yl)-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl) pyridinium chloride or other pharmaceutially acceptable salts thereof,
- (bc) 1-(2-(5-methyl-thien-2-yl)-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl)
- 115 pyridinium chloride or other pharmaceutially acceptable salts thereof,
- (bd) 1-(2-(4- carboethoxy -thiazolidin-3-yl)-2-oxoethyl) -3-(methanesulfonyl hydrazino carbonyl ) pyridinium chloride or other pharmaceutially acceptable salts thereof,
- (be) 1-(2-(4-benzyl piperidin-1-yl)-2-oxoethyl)-3-(methanesulfonyl hydrazino carbonyl) pyridinium chloride or other pharmaceutically acceptable salts thereof,
- 120 (bf) N,N(-bis[3-carbonyl-1-(2-(2-ethoxycarbonyl pyrrolidin-1-yl)-2-oxoethyl) pyridinium] hydrazine dichloride or other pharmaceutically acceptable salts thereof,
- (bg) 1-(2-phenylamino-2-oxoethyl)-4 -[ 2-(benzoyloxy) ethylamino carbonyl ] pyridinium chloride or other pharmaceutically acceptable salts thereof,
- (bh) 1-(2-thien-2(-yl-2-oxoethyl)-3-(phenyl hydrazino carbonyl) pyridinium bromide or
- 125 other pharmaceutically acceptable salts thereof,
- (bi) 1-(2-thien-2(-yl-2-oxoethyl)-3-(p-methoxy phenyl sulfonyl hydrazino carbonyl) pyridinium bromide or other pharmaceutically acceptable salts thereof,
- (bj) 1-(2-ethoxy-2-oxoethyl)-3-(phenyl aminocarbonyl hydrazino carbonyl ) pyridinium

- bromide or other pharmaceutically acceptable salts thereof,
- 130 (bk) 1-(2-ethoxy-2-oxoethyl)-3-(p-toluene sulfonyl hydrazino carbonyl) pyridinium bromide or other pharmaceutically acceptable salts thereof,
- (bl) 1-(2-phenyl-2-oxoethyl)-3-(phenylamino carbonyl hydrazino carbonyl ) pyridinium bromide or other pharmaceutically acceptable salts thereof,
- (bm) 1-(2-phenylamino-2-oxoethyl)-3-(benzyl sulfonyl hydrazino carbonyl)
- 135 pyridiniumchloride or other pharmaceutically acceptable salts thereof,
- (bn) 1-(2-phenyl-2-oxoethyl)-4-(methanesulfonyl hydrazino carbonyl ) pyridinium bromide or other pharmaceutically acceptable salts thereof,
- (bo) 1-(2-phenyl-2-oxoethyl)-3-(phenyl hydrazino carbonyl ) pyridinium bromide or other pharmaceutically acceptable salts thereof,
- 140 (bp) 1 -(2-ethoxy-2-oxoethyl)-4-[2-(benzoyloxy) ethyl amino carbonyl ] pyridinium bromide or other pharmaceutically acceptable salts thereof,
- (bq) 1-(2-ethoxy-2-oxoethyl)-3-(phenyl hydrazino carbonyl ) pyridinium bromide or other pharmaceutically acceptable salts thereof,
- (br) 1-(2-phenyl-2-oxoethyl)-3-(p-methoxyphenyl sulfonyl hydrazino carbonyl )
- 145 pyridinium bromide or other pharmaceutically acceptable salts thereof,
- (bs) 1-(2-phenyl-2-oxoethyl)- 4-[2-(benzoyloxy) ethyl amino carbonyl] pyridinium bromide or other pharmaceutically acceptable salts thereof,
- (bt) 1-(2-ethoxy-2-oxoethyl)- 4-(p-methanesulfonyl hydrazino carbonyl ) pyridinium bromide or other pharmaceutically acceptable salts thereof,
- 150 (bu) 3-carboxylamino-1- (2-(2, 4-dichlorophenyl)-2-oxoethyl)-pyridinium bromide or other pharmaceutically acceptable salts thereof,
- (bv) 3-(tetrahydrobenzothiazol-2-yl) aminocarbonyl -1-(2-(2, 4-dichlorophenyl)-2-oxoethyl)-pyridinium bromide or other pharmaceutically acceptable salts thereof,
- (bw) 1-(2-phenyl-2-oxoethyl)-3-((2-hydroxyethyl) aminocarbonyl) pyridinium bromide
- 155 or other pharmaceutically acceptable salts thereof,
- (bx) 3-carboxylamino-1- (2-thien-2'-yl-2-oxoethyl)-pyridinium bromide or other pharmaceutically acceptable salts thereof,
- (by) 1-(2-phenyl -2-oxoethyl)-3-((p-sulfonamidophenylene) aminocarbonyl) pyridinium bromide or other pharmaceutically acceptable salts thereof,

- 160 (bz) 1-(2-ethoxy-2-oxoethyl)-3-((2-hydroxyethyl) aminocarbonyl) pyridinium bromide or other pharmaceutically acceptable salts thereof,  
(ca) 1-(2-phenyl-2-oxoethyl)-3-(isopropylloxycarbonyl) pyridinium bromide or other pharmaceutically acceptable salts thereof,  
(cb) 1-(2-oxopropyl)-3-((2-hydroxyethyl) aminocarbonyl) pyridinium chloride or other  
165 pharmaceutically acceptable salts thereof,  
(cc) 1-(2-thien-2'-yl-2-oxoethyl)-3-((2-hydroxyethyl) aminocarbonyl) pyridinium bromide or other pharmaceutically acceptable salts thereof,  
(cd) 1-(2-(2,4 - dichlorophenyl-2-oxoethyl) -3- (isopropylloxycarbonyl) pyridinium bromide or other pharmaceutically acceptable salts thereof,  
170 (ce) 1- (2-phenyl - 2- oxoethyl) - 3- ((4-methylthiazol - 2 -yl) aminocarbonyl) pyridinium bromide or other pharmaceutically acceptable salts thereof,  
(cf) 1-(2- phenylamino -2- oxoethyl ) -3- (n-butylloxycarbonyl) pyridinium chloride or other pharmaceutically acceptable salts thereof,  
(cg) 1- (2- phenylamino - 2- oxoethyl)- 3- ((2-hydroxyethyl) aminocarbonyl) -  
175 pyridinium chloride or other pharmaceutically acceptable salts thereof,  
(ch) 1- (2- (2,4 - dichlorophenyl ) - 2-oxoethyl) - 3- (n - butoxycarbonyl) pyridinium bromide or other pharmaceutically acceptable salts thereof,  
(ci) 1-(2 - (2, 4 - dichlorophenyl) - 2-oxoethyl) - 3- (n-butylamino-carbonyl) pyridinium bromide or other pharmaceutically acceptable salts thereof,  
180 (cj) 1-(2-phenyl-2-oxoethyl)-3-(1-phenyl-1-oxomethyl) pyridinium bromide or other pharmaceutically acceptable salts thereof and  
(ck) 1- (2 phenyl - 2-oxoethyl) - 3- (methoxycarbonyl) pyridinium bromide or other pharmaceutically acceptable salts thereof.